JUNE
1961
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AMERICAN Cinematographer

The Magazine of Motion Picture Photography

LIMITED ANIMATION
—Page 358

LIGHTING SETS FOR TV FILMS
—Page 354

IMPORTANCE OF MAKEUP TESTS
—Page 348

NEW RAPID PROCESSOR
—Page 361

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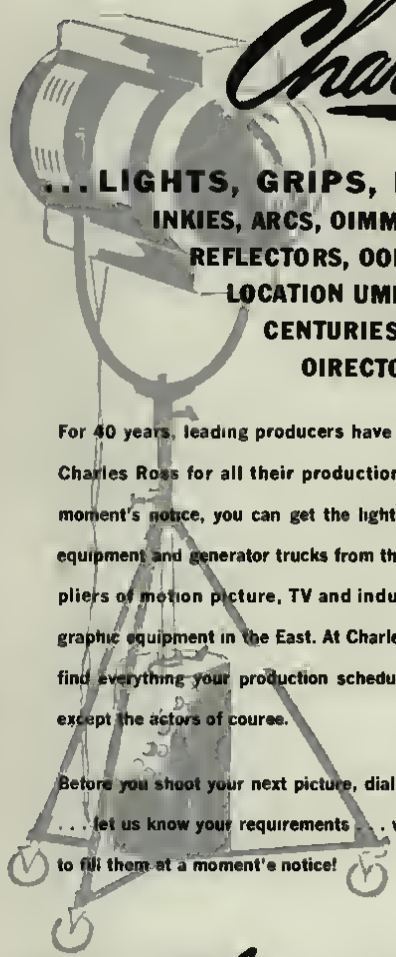
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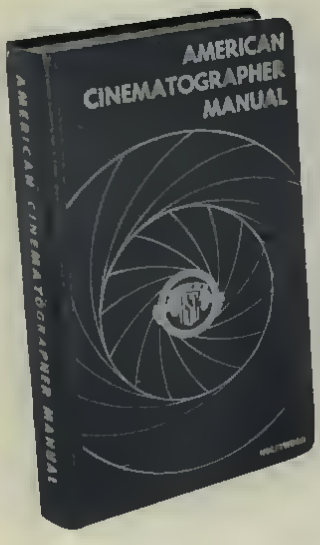
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AMERICAN

Cinematographer

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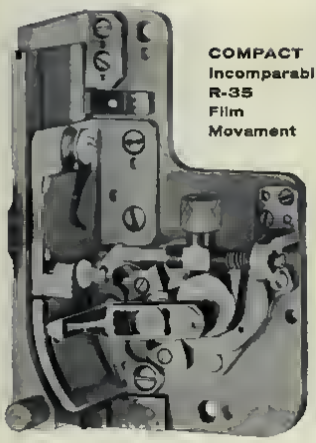
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INDUSTRY NEWS

News briefs of industry activities, products and progress

Animation Production At All-time High

There is more production of animated cartoons, TV spots, etc, going on now than ever before in the industry's history, according to Lawrence Kilty, business representative for screen cartoonists union. He estimates that close to $14,000,000 will be spent for animated film production this year.

Format Films, Hanna-Barbera, Larry Harmon, Snowball, UPA, Walt Disney, Walter Lantz, and Warner Brothers are the top animated cartoon producers in Hollywood.

* * *

CinemaScope Newsreel Debuts

Spyros Skouras, head of 20th Century-Fox, who long has mulled the idea of a widescreen newsreel in the CinemaScope format, had the dream come true recently when initial C Scope newsreel was launched in a number of theatres in Sydney, Australia. Reportedly, its a test run of the widescreen format for newsreels prior to its introduction in the U.S.

The Australian newsweeklies comprised local or Australian events filmed by an experienced staff of three cameramen using Bausch & Lomb C-Scope lenses on cameras.

* * *

Ansco's Fast Color Film

The special Ansco 16mm color film used in documenting Lt. Commander Alan B. Shepard's historic space flight May 5 in the dimly-lighted Mercury capsule, is said to be the fastest color film yet produced. Although the film is presently rated at ASA 200, Ansco's experiments have indicated that a much higher rating—up to ASA 500—is feasible because of the film's good latitude, which permits use of smaller lens openings without the necessity of forced processing.

Anscochrome FPC-132, which was developed especially for the government's space program, is essentially a daylight type film (6000° K), but may be used under tungsten illumination in special cases (with the appropriate filters).

The new film reportedly has excellent color reproduction qualities and its wide latitude permits variations of plus or minus ½ lens stop for full color quality, and up to 1 full lens stop for applications where data acquisition is the requirement. Grain is of moderate size and gradation is similar to that in Super Anscochrome. Resolution is between 45 and 55 lines per mm.

The film, which will be made generally available soon, will be supplied in 16mm, 35mm, and 70mm widths. The 16mm film will be supplied in high-speed perforation (2R 3000), the 35mm in negative perforation (B&H 1870) and high speed (KS 1870), and the 70mm in Type I and Type II.

* * *

Birns & Sawyer Acquires Rental Studio

The former studios and sound stages of KCOP-TV located at 100 Cahuenga, Hollywood, have been acquired by Birns & Sawyer Cine Equipment Co of Hollywood.

According to Jack Birns, President of company, $50,000 will be spent in modernizing and re-furbishing the property for a rental facility for independent, in-plant and industrial motion picture producers. In addition to stage space, company will also make available on rental basis all necessary equipment for motion picture production.

* * *

SOS Changes Name

S O S Cinema Supply Corp., New York, N Y, last month officially changed its corporate name to S.O.S. Photo-Cine-Optics, Inc.

Beginning as a theatre equipment supply house, so many lines of equipment have been added over the years that S O.S. has been described as "the motion picture department store."

Just as the company branched out into motion picture production equipment, in recent years the firm's business has expanded rapidly in the fields of airborne photo instrumentation, medical photography, X-ray and cinecardiology. The company also has become an important supplier of motion picture equipment in aeronautics, space and rocketry programs.



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WHAT'S NEW

IN EQUIPMENT, ACCESSORIES, SERVICES



New ColorTran Converter

ColorTran's 40 ampere Mark II Cinemaster Converter, newly designed to control eight 500 watt PAR 64 Lamps at 3400 degrees Kelvin, equal to 40,000 watts of usable photographic light at full duty cycle, is now available.

A supplement to the more powerful "Chief," the Mark II Cinemaster is engineered to fill requirements in the median power range. Its Lamp Capacity, with 200/240-volts Input, is 4,075 nominal watts at 3400 degrees Kelvin; with 100/120-volts Input, 2,200 nominal watts at 3400 degrees Kelvin.

Other features are: Two banks of color-coded pushbutton switches, each bank individually monitored on Kelvin meter; safety interlock switch permits starting operation at normal lamp voltage only; lineload ammeter; 6 outlets plus two 115-volt accessory outlets; heavy gauge steel case and cover, recessed control panel to protect instruments in rugged location environments, 3-wire grounded system; and wide range input voltage control Measures 9"x9½"x12", weighs 50 pounds. Price, $258.00. Available with remote control on special order. Also available in explosion-proof housing. For further information, write Natural Lighting Corporation, 630 South Flower Street. Burbank California.

* * *

Leasing of Special Body Trucks

A new, low-cost plan, under which special-body trucks used in the motion picture industry can be leased without maintenance for from four to eight years, is announced by Wheels, Inc., 6200 No. Western Ave., Chicago 45, Ill., leading lessor of automobile and truck fleets to industry.

The company engineers bodies and chassis to fit user's specifications, and supervises construction. Lease terms range from 4 to 8 years, and charges are based on special fleet discount prices. The equipment may be purchased by user at end of lease term.

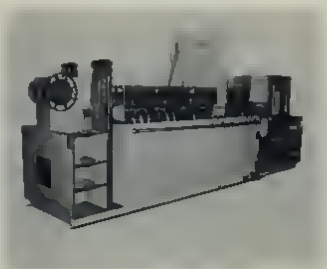
* * *

70mm Moviola

Moviola Manufacturing Co., 1451 No Gordon St., Hollywood 28, Calif., is supplying a new viewer for 70mm film which has been engineered especially for photo-instrumentation use. The machine projects a 10"x12" image of the entire 2¼"x2¼" format with film edges visible for observation of time pips. Film transport provides for both cine and single-frame operation. During single-frame use, glass platens automatically flatten the film to produce optimum projection quality.

A Geneva type intermittent movement provides operating speeds of 140' per minute in cine mode either forward or reverse. The shutter mechanism operates at speeds over 16 f.p.s. and drops out of action when machine is operating more slowly, thus avoiding flicker. Real capacity is 1000'; standard model accommodates ASA Type I film with a 10-perforation advance. (4- or 5-perforation advance or ASA Type II pitch is available on special order.)

* * *



Kodachrome Film Processor

The Houston Model 515-K2 is a professional-quality, double-duty processor for the new Kodachrome K2

Continued On Page 332

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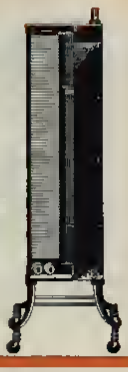
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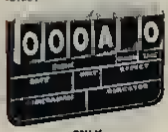
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WHAT'S NEW

Continued From Page 330

film. The new machine, automatically processes both 8/16mm and 35mm film, either simultaneously or separately. Or it can develop two reels of 8/16 at once.

Independent drive systems for the two film sizes are on opposite sides, but utilize the same tanks for solution, rinse and wash, plus a common dry box. A single all-purpose drive shaft on bottom eliminates film tension. Speeds are 12⅓ fpm for 8/16 mm and 5 fpm for 35mm.

The machine is completely equipped with automatic on-off switch, loading elevators, pumps, replenisher tanks, compressor, air filters, dry box and control panel. Automatically controlled heating and refrigerating equipment is also standard. The entire processor, which is 5-ft. high and 16-ft. long, can be installed quickly and requires no platform. It was engineered to meet Eastman Kodak specifications by Houston Photo Products Division of Houston Fearless Corporation, Burbank, California.

* * *



Easy-leveling Tripod Heads

The problem of leveling a tripod mounted camera on uneven ground has been ingeniously simplified with two Linhof tripod heads now available from Kling Photo Corporation, 257 Park Ave. South, New York, New York.

In addition to full panorama and tilting adjustments, the new Linhof heads have a special leveling device which works in conjunction with a built-in spirit level for quick camera placement on uneven ground. The adjustment is made in seconds, and eliminates the need for changing tripod leg extensions.

Two models of the new heads are available: the Leveling Professional Panhead, priced at $59.50 is designed for 2¼x3¼ and 4x5 professional cameras and 16mm movie cameras, and the Leveling Reporter Panhead, at $24.50, which is suitable for 35mm and twin lens cameras as well as 8mm movie cameras. Cable releases which operate through the panning handle are available as accessories.

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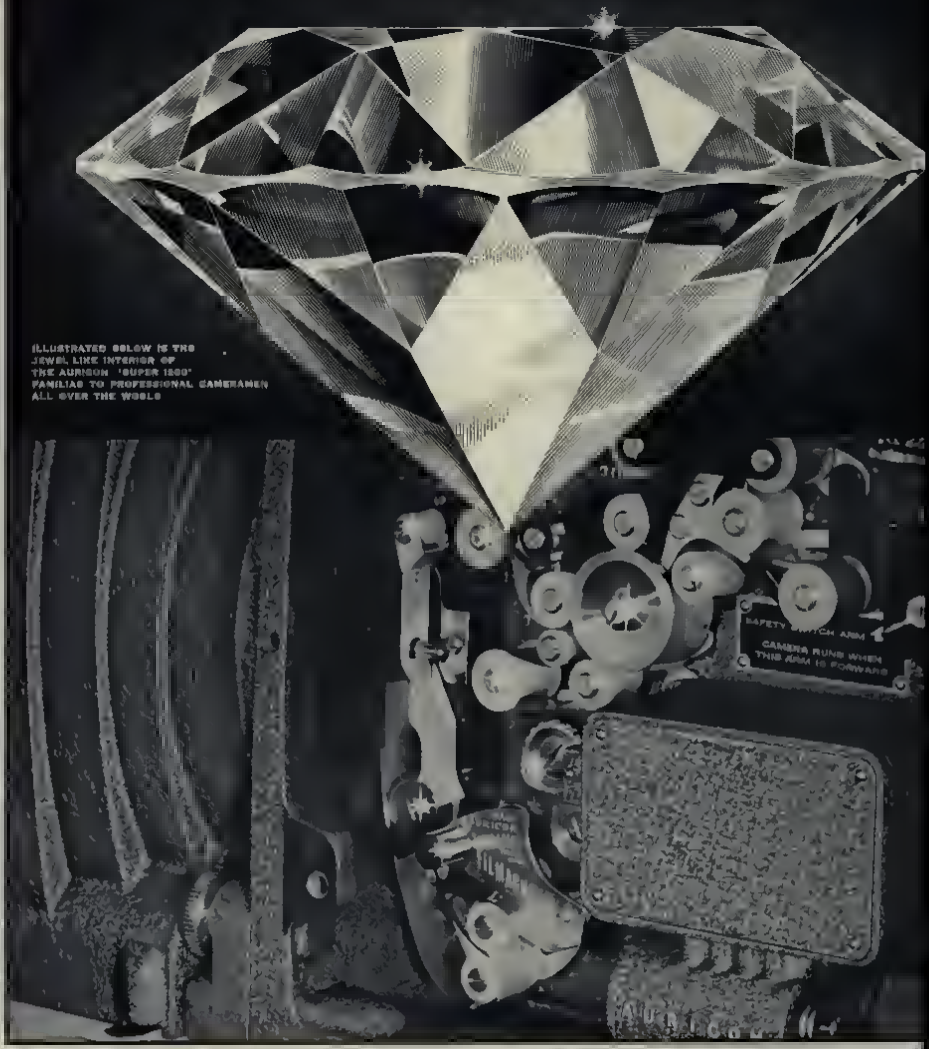
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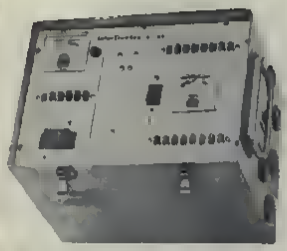


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Q & A

Technical Questions and Answers

Q.—*I have just viewed some of the film that was shot for us with a rented Mitchell BNC and find just about half of it is fogged. Our camera operator was an experienced one and says he is at loss to know what caused the trouble.—J. K. McC., Detroit.*

A.—There are two probable causes: 1) the film magazine covers were not securely or fully screwed in, or 2) the camera door was not completely closed after threading the film. Either condition would permit light to leak through to the film. Remind your operator to check and tighten magazine covers carefully, and also to double-check the door latch after threading film. Another possibility is that the camera door may be sprung, in which case it first should be repaired or replaced before camera is used again.

Q.—*After purchasing a used Eyemo camera, I recently had it overhauled with the object of putting it in first-class condition. Afterward, the first roll of film shot with it appeared consistently underexposed from start to finish. Would this be due to the age of the camera (5 years)? It occurs to me the motor spring may have become weakened through lengthy use. Is this possible?—O. H. H., Schenectady, N. Y.*

A.—Most likely the camera was not carefully checked for running speed before it was delivered to you following the overhaul. Check this first. It is possible that the governor requires adjustment or replacement. Sometimes when the camera speed is slow or fast, it is necessary to re-calibrate the speed dial after making a series of checks to determine the correct fps speed marks.

One of the most accurate methods for checking camera running speed is to use a Strobotac, for which a timing chart follows:

Speed (fps)	*8*	*12*	*16*	*24*	*32*	*48*
Shutter (rpm)	*480*	*720*	*960*	*1440*	*1920*	*2880*
Plus or minus allowance:	*10%*	*10%*	*5%*	*5%*	*5%*	*5%*

An alternative is to make a speed check by counting off the film footage run during a given time interval. Such a check should be made with the camera loaded with a full spool of film (as opposed to a short, unspooled strip) to insure camera will be operating under normal conditions of film drag. The footage dial should register a 30-ft. film run in the following times at the indicated operating speeds:

60 seconds: 8 fps.
40 " 12 fps
30 " 16 fps
20 " 24 fps
15 " 32 fps
10 " 48 fps
7½ " 64 fps

Continued On Page 336

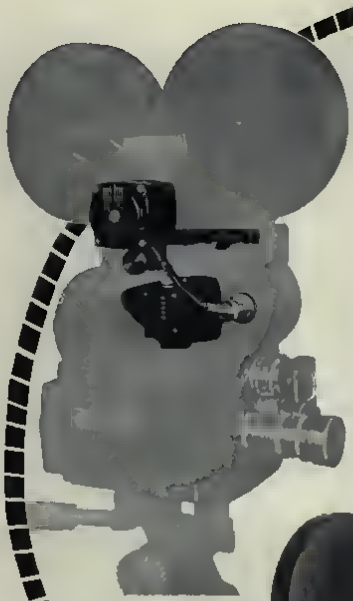
AURICONVERSION*

BY BIRNS & SAWYER OF HOLLYWOOD

for "Auriconscious" Cameramen

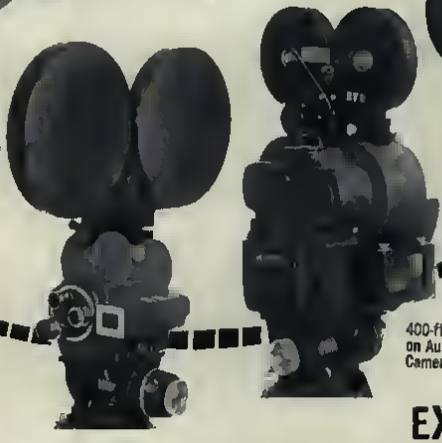
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AURICONVERSION* (left) with 400-ft. magazine on Auricon Cine-Voice Camera.

1200-ft. AURICONVERSION* on Auricon Cine-Voice Camera (right).



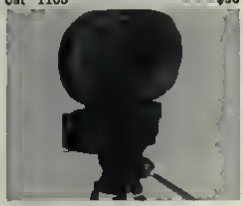


AURICONVERSION* (left) with 1200-ft. magazine on Auricon Pro-200.

400-ft. AURICONVERSION* on Auricon Pro-200 Camera (left).



MITCHICON ADAPTER for extending use of Pro-600 to 1200' capacity (not needed on C-V, Pro-200 units). Cat 1105 $95



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QUESTIONS & ANSWERS

Continued From Page 334

Q.—*Having just received an assignment that will take me into the southwest desert for about a month, I am apprehensive about using my new camera equipment there, considering the fact it will be windy and with blowing sand an almost daily condition. Have you previously published anything extensive on the subject of protecting camera equipment under such working conditions? Any suggestions? N. P. A., Seattle, Wash.*

A.—No, nothing published recently. However, where wind and blowing dust or sand is encountered, it is advisable not to open the camera door in unprotected areas more than is absolutely necessary. Under the conditions you describe, we advise using a camel's-hair brush to clean off any sand or foreign matter accumulated on surface of the camera and tripod head. Use the same type brush also to clean the pressure plate, aperture plate, sprockets, and lenses.

We strongly advise against use of lens tissue to clean lens surfaces unless surface is first cleaned with a camel's-hair brush. By brushing lens first, the danger of rubbing coarse dirt or sand particles against surface with the tissue will be avoided.

A final suggestion: following the cleaning procedure recommended above, slip a large plastic bag over the camera and securely tie the open end to prevent dust filtering through. A plastic bag may also be slipped over camera when it is not actually in use between takes on location, as a dust inhibitor.

GOT A PROBLEM?

Need professional advice on a picture-making problem, about equipment, film or cinematography? Reader's questions are invited and will be answered by mail when accompanied by a stamped, addressed envelope for reply. Questions and answers considered of general interest to other readers will be published here each month.

Address your questions to the "Question & Answer Editor," American Cinematographer, P.O. Box 2230, Hollywood 28, Calif.











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HOLLYWOOD BULLETIN BOARD

•George Clemens wins best TV photography "Emmy"
•Edgar Bergen entertains at ASC's May dinner
•Leon Shamroy re-pacted by 20th Century-Fox.



GEORGE CLEMENS, ASC, won 1960 Emmy award of Academy of Television Arts & Sciences for best cinematography of a TV film series, viz: CBS' "Twilight Zone"



WALTER STRENGE, ASC, received Emmy nomination for photography of "Sam Elder Story," segment in the 1960 "Wagon Train" series



WILLIAM MARGULIES, ASC, received Emmy nomination for the photography of "Outrage at Pawnee Sand," in NBC's "Outlaws" TV series



EDGAR BERGEN, sans Charlie McCarthy, entertained members of the ASC at the Society's monthly dinner May 22. Bergen, an ASC Associate, is a non-professional cinematographer of note, owns several cameras



HAL MOHR, ASC, last month was re-elected to the Board of Directors of the Academy of Motion Picture Arts & Sciences. He is also a Board member of the ASC. Mohr and Charles Clark, ASC, represent the industry's cinematographers in the Academy



ASC PRESIDENT William Daniels officiated as one of the judges for "out-of-this-world" headdress contest which featured the Les Floristes' Ball at the Beverly Hilton Hotel in Beverly Hills. Receiving Daniels' congratulations is Sweepstakes Winner Mrs. Mary McAllister, who was with her creation, "Carnival de Nice." (Theins Hoover photo)



LEON SHAMROY, ASC, three-time "Oscar" winner and one of 20th Century-Fox's veteran directors of photography, last month celebrated his 22nd year with the studio by signing a new 12-month contract. He's presently in Europe shooting "Tender Is The Night" for TCF



CHARLES LANG, JR., ASC, has been chosen by MGM to direct the photography of the studio's initial Cinerama production, "How The West Was Won," directed by Henry Hathaway. Company is presently locationing in Paducah, Kentucky

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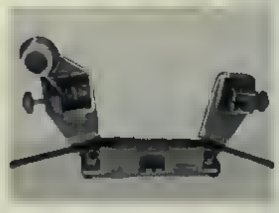
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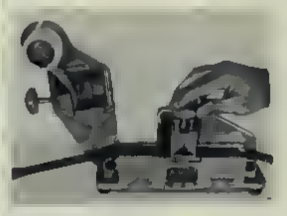
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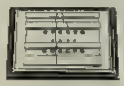
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WHAT THE INDUSTRY'S CAMERAMEN WERE SHOOTING LAST MONTH

by MARION HUTCHINS

CASCADE STUDIO

ROY SEAWRIGHT, Commercials*

HENRY SHARP, ASC Commercials*

GEORGE FOLSEY, ASC, Commercials*

TYLER BYARS, Commercials*

ELWOOD BREDELL, ASC, Commercials*

COLUMBIA STUDIOS

GERT ANDERSEN, ASC, "Donna Reed Show"*

JACK MARTA, "Route 66"*

CHARLES WELBORN, "Dennis the Menace"*

GUISSEPPE ROTUNNO, "Two Enemies" (Dino de Laurentiis Prods., shooting in Israel) with David Niven and Albert Sordi Guy Hamilton, director

ALDO TONTI, "Barabas" (Technirama 70 & Technicolor, Dino De Laurentiis Prods., shooting in Italy) with Anthony Quinn and Silvano Mangano Richard Fleischer, director.



ERNEST HALLER, ASC
Currently photographing "Married Too Young" at Republic Studio for Handlinar Productions Haller shot "Gone With The Wind" in 1939 won an "Oscar" for it

JOE MACDONALD, ASC, "Walk on the Wild Side" (Famous Artists Prods.) with Laurence Harvey and Capucine Edward Dmytryk, director

CHARLES LAWTON, JR., ASC, "The Tiger Among Us" (Ladd Enterprises, Inc.) with Alan Ladd and Rod Steiger Philip Leacock, director

JOE BIROC, ASC, "Sail a Crooked Ship" (Philip Berry Prods.) with Robert Wagner and Dolores Hart. Irving Brecher, director

ANTHONY HELLER, "On the Brink" (Hammer Film Prods., shooting in London) with Macdonald Corey and Shirley Ann Field Joe Losey, director

ARTHUR ARLING, ASC, "Notorious Landlady" (Kohlmar-Quine Prod.) with Kim Novak and Jack Lemmon Richard Quine, director.

THOMAS TUTWILER, ASC "Golf Show"*

DESILU—Cahuenga

LOTHROP WORTH, ASC, "The Real McCoy's"*

HENRY CRONJAGER, "Jack Benny Show"*

DESILU—Culver City

LUCIEN ANDRIOT, ASC, "Guestward Ho"*

DESILU—Gower

GORDON AVIL, ASC, "Teenage Millionaire" (Ludlow Prods Inc., for UA) with Jimmy Clanton and Rocky Graziano Laurence F. Doheny, director.

FOX WESTERN AVENUE

JAMES VAN TREES, ASC, "Dobbie Gillis"*

GENERAL SERVICE STUDIOS

ROBERT MORENO, "Adventures of Ozzie and Harriet"*

ROBERT HAGER, "Perry Mason"*

INDEPENDENT

RICARDO TORRE, "The Magic Fountain" (C Scope & Eastman color, shooting in Madrid) with Fernando Lamas and Esther Williams Fernando Lamas, director

ALEX PHILLIPS, "Geronimo" (Panavision & Technicolor, Levy-Gardner-Laven Prod for UA) with Chuck Connors and Kamala Devi Arnold Laven, director

ELWOOD J NICHOLSON, "The Phantom Planet" (Four Crown Prods., shooting at Producers Studio) with Dean Fredricks and Coleen Gray Bill Marshall, director.

ERNEST LASZLO, ASC, "Judgment at Nuremberg" (Stanley Kramer Prods for UA release) with Spencer Tracy and Burt Lancaster Stanley Kramer, director

ROBERT KRASKER, "El Cid" (Super Technirama 70, Samuel Brouston Prods. with D.E.A.R., Films for Allied Artists & J. Arthur Rank, shooting in Spain) with Charlton Heston and Sophia Loren Anthony Mann, director

MARIO MONTUORI, "Last Days of Sodom and Gomorrah" (Embassy Pictures Titanus, Eastman color; shooting in Morocco) with Stewart Granger and Pier Angeli Robert Aldrich, director.

ARTHUR ORNITZ, "Pity Me Not" (Color by Movielab Gayle-Swimmer Anthony Films, AP MN Prods.) with Tony Anthony and Ann Hegira Saul Swimmer, director

WILKIE COOPER, "The Valiant" (CScope, B.H.P Inc. for UA., shooting in Italy & London) with John Mills and Ettore Manni Roy Baker, director.



FRANK PLANER, ASC
Starts shooting William Wyler's "Infamous" at Goldwyn Studios June 5th

ROBERT BRONNER, ASC, "Pocketful of Miracles" (PVision & Consolidated color, Franton Prods for UA) with Glenn Ford, Bette Davis and Hope Lange Frank Capra, director

HOWARD SCHWARTZ, "A Public Affair" (Girard Lewis Prod., shooting in Sacramento) with Myron McCormick and Edw Binns Bernard Girard, director

Continued On Page 342

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BEHIND THE CAMERAS

Continued From Page 340

INDEPENDENT

JACK BOHRER, "Flight of the Last Balloon" (Woolner Marquette Juran Prods., shooting in Puerto Rico) with Mala Powers and Marshall Thompson Jerry Juran, director

KTTV STUDIOS

GILBERT WARRENTON, ASC, "The Flight That Disappeared" (Harvard Film Corp for UA release) with Craig Hill and Paula Raymond Reginald LeBorg, director.

METRO-GOLDWYN-MAYER

JOHN NICHOLAUS, "Rawhide"*

GEORGE CLEMENS, ASC, "Twilight Zone"*

ROBERT SURTEES, ASC, "Mutiny on the Bounty" (Ultra Panavision & Color, shooting in Tahiti, Arcola Prods.) with Marlon Brando and Trevor Howard Lewis Milestone, director,

JOSEPH RUTTENBERG, ASC, "Bachelor in Paradise" (C'Scope & Color, Ted Richmond Prods.) with Bob Hope and Lana Turner Jack Arnold, director

PARAMOUNT STUDIOS

RUSSELL HARLAN, ASC, "Hatari!" (Howard Hawks Prod., Technicolor; shooting in Africa) with John Wayne and Gerard Blain. Howard Hawks, producer director

SHUNICHIRO NAKAO, "My Geisha" (Saschiko Prods, Technicolar, shooting in Japan) with Shirley MacLaine and Yves Montand. Jack Cardiff, director

CHARLES LANG, JR., ASC, "Blue Hawaii" (Panavision & Technicolor) with Elvis Presley and Joan Blackman Norman Taurog, director

LIONEL LINDON, ASC, 'Too Late Blues" with Bobby Darin and Stella Stevens John Cassaveles, director

REPUBLIC STUDIOS

ERNEST HALLER, ASC, 'Married Too Young" (Headliner Prod.) with Harold Lloyd Jr. and Jana Lund George Moskov, director

REVUE STUDIOS

SAM LEAVITT, ASC, "Cape Fear" (Melville Prods.) with Gregory Peek and Robert Mitchum. J Lee Thompson, director

ELLIS THACKERY, ASC, EMIL HARRIS, "Westinghouse Playhouse"*

MACK STENGLER, ASC, "Leave it to Beaver"*

RUSSELL METTY, ASC, "Flower Drum Song" (Panavision, Ross Hunter Prod.) with Nancy Kwan and James Shigeta. Henry Koster, director

WALTER STRENGE, ASC, "Wagon Train"*

RAY RENNAHAN, ASC, "Laramie"*

PHILIP LATHROP, ASC, "The Last Hero" (Panavision; Joel Prod., shooting in N M.) with Kirk Douglas and Gena Rowlands. David Miller, director

JOHN WARREN, ASC, BENJ KLINE, ASC, LIONEL LINDON, ASC, 'Thriller"*

BENJ KLINE, ASC, JACK MACKENZIE, ASC, "Wells Fargo"*

RAY RENNAHAN, ASC, ELLIS THACKERY, ASC, 'Frontier Circus"*

JACK MACKENZIE, ASC, EMIL HARRIS, "Bringing Up Buddy"*

RAY CORY, ASC, ELLIS THACKERY, ASC, "Bachelor Father"*

NEAL BECKNER, "Alfred Hitchcock Presents"

JOHN WARREN, ASC, ROBERT GOUGH, "Holiday Lodge"*

JOHN WARREN, ASC, "The Investigators"*

TWENTIETH CENTURY-FOX

ELLIS CARTER, ASC, "A Star in the West" (C'Scope & DeLuxe color) with Debbie Reynolds and Ken Scott Vincent Sherman, director

DANIEL FAPP, ASC, "Bachelor Flat' (C'Scope & DeLuxe color) with Richard Beymer and Tuesday Weld. Frank Tashlin, director

LLOYD AHERN, ASC, "Adventures in Paradise"*

N SHIPTON, "Sin of Angels" (C'Scope; Rossen Ent., shooting in N Y.) with Paul Newman and Jackie Gleason Robert Rossen, producer-director

FREDDIE FRANCIS, "The Innocents" (C'Scope, England Achilles Film Prod.) with Deborrah Kerr and Megs Jenkins. Jack Clayton, director

LUCIEN BALLARD, ASC, "Marines, Let's Go!" (C'Scope & Color; shooting in Japan)

LEON SHAMROY, ASC, "Tender is the Night" (C'Scope & DeLuxe color, shooting in France) with Jennifer Jones and Jason Robards, Jr Henry King, director.

FLOYD CROSBY ASC, "Vanishing Frontier" (C'Scope & Color, AP1, shooting in Apache Junction, Ariz.) with Kent Taylor and Jody McCrea. John Bushelman, director

WALT DISNEY STUDIOS

EDWARD COLMAN, ASC, "Babes in Toyland" with Ray Bolger and Tommy Sands Jack Donohue, director.

WILLIAM SNYDER, ASC, "Moon Pilot" with Tom Tryon and Brian Keith James Neilson, director

WARNER BROS

ROBERT BURKS, ASC "The Music Man" (Technirama & Technicolor) with Robert Preston and Shirley Jones Morton DaCosta, producer director

BERT GLENNON, "Lad: A Dag" with Peggy McCay and Peter Breck Aram Avakian, director

RALPH WOOLSEY, ASC, BURT GLENNON, "Lawman"*

ROBERT HOFFMAN, 'Cheyenne"*

GLEN MACWILLIAMS, ASC, ROBERT HOFFMAN, "77 Sunset Strip"*

HARRY STRADLING, ASC, "A Majority of One" (Mervyn LeRoy Prod.) with Rosalind Russell and Alec Guinness. Mervyn LeRoy, producer director

HAROLD STINE, ASC, 'Ladies of the Mob" with Shirley Knight and Andrew Duggan Walter Doniger, director

HAROLD STINE, ASC, RALPH WOOLSEY, ASC, ROBERT HOFFMAN, "Surfside 6"*

RAY FERNSTROM, ASC, JACK MARQUETTE, 'Roaring Twenties"*

EDWIN DUPAR, ASC, JACK MARQUETTE, LEWIS JENNINGS, "Hawaiian Eye"*

LEWIS JENNINGS, 'Bronco"*

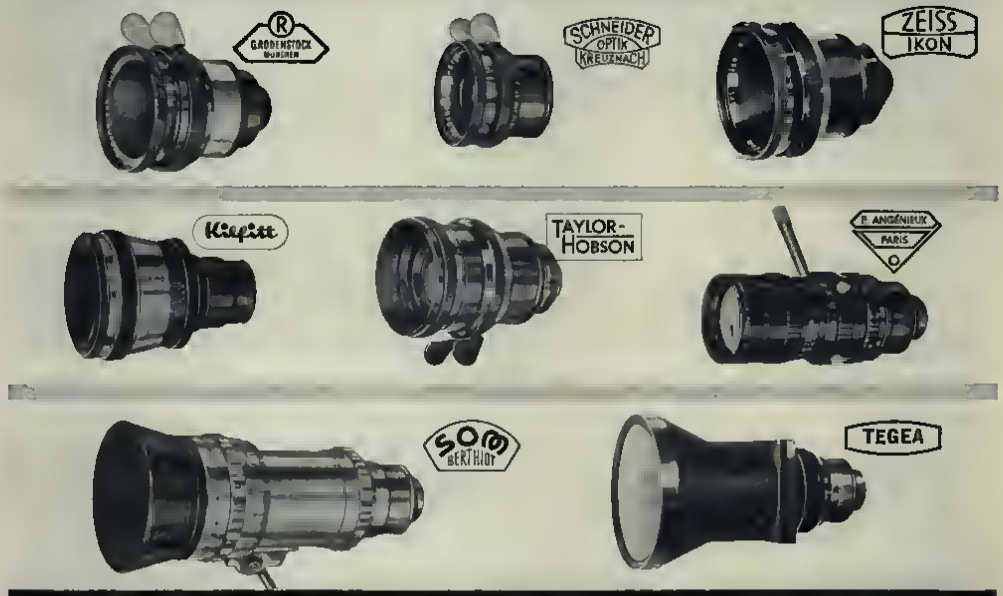
THOMAS TUTWILER, ASC, "Commercials"*

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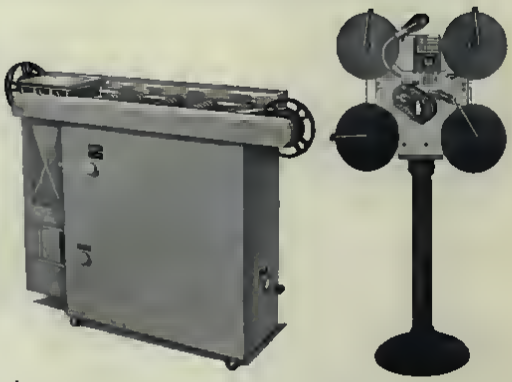
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WILLIAM DANIELS, ASC, whose color charts gave solution to makeup and wardrobe problems for MGM's "Lady L"

The Importance Of Makeup Tests In Pre-Production Planning

How special makeup color charts plus screen tests solved the problem of how to achieve photographically the delicate quality in flesh tone required for the star of Metro-Goldwyn-Mayer's "Lady L."

By ARTHUR E. GAVIN

DURING PRE-PRODUCTION conferences for "Lady L," soon to go into production at MGM studios, an unusual makeup problem was resolved and decisions firmed in the matter of costuming with the aid of two color charts prepared under the guidance of William Daniels, ASC, who will direct the photography of the picture.

Because the story of "Lady L" is laid in the period between 1890 and 1915, when ladies generally kept out of the sun, used parasols, and to be pale complexioned was the vogue, it was decided that this same quality should prevail in the photography of Gina Lollobrigida, the star of the picture.

A simple answer to the problem would be to put white makeup on Gina, but the solution was not that simple, according to Daniels.

White Makeup Avoided

"To achieve the photographic result we want," he said, "it is necessary to establish and maintain the correct color relationship between the white of the eyes and the skin. Our concern is to make our star look entirely natural and, of course, at all times beautiful."

The charts graphically demonstrated to Director George Cukor and wardrobe designer Orry Kelly how the desired "peaches-and-cream" complexion for Gina could be achieved without resorting to use of white makeup. The charts, Daniels explains, show the effect surrounding colors have on face and skin tones, as represented by the makeup colors, and indicated where it was necessary to start: with real skin and white-of-the-eye colors.

Charts of Makeup Materials

The charts, which are pictured on the opposite page, are 11″ by 25″ in size and comprise a series of 10 panels each—each panel about 5″ by 5½″ in size. These are colored—in the case of chart No. 1—with regular makeup materials, as are the small squares in the center of the panels in chart No. 2.

"In chart No. 1," Daniels explains, " all the small disks are identical and are the true color of the so-called white of the eye. The color is not true white, but a color nearly white which was compounded following a study of the whites of Gina Lollobrigida's eyes. Bill Tuttle, head of MGM's makeup department and who is also a fine portrait artist, copied from life the real color of the whites of Gina's eyes, using painter's colors. Gina had to sit for this, the same as she would for a portrait.

"The colors surrounding the disks are standard motion picture color makeup base. The panels numbered 1 to 5 are in brown tones and numbers 6 to 10 are in pink tones. Examination of chart No 1 will show that in order to obtain the proper color relation between the skin and the 'white' of the eye, we must select makeup No. 3 or darker in the brown tones, or at least No 7 in the pink tones.

"Further examination of this chart will show that if we use either makeup No. 1 or No. 2 in the brown tones, or No. 6 in the pink tones the result will be a very undesirable 'geisha girl' effect. Geisha girls' eyes always look dull or bloodshot because the rice powder makeup they use is actually whiter than the white of their eyes. Thus, we must accept the basic relationship of No. 3 in the brown makeup or No. 7 in the pink—or darker in either—to keep our actresses and actors looking real.

Chart Squares Identical

"Now suppose it is desirable, because of the character played, or the period of the story, to have the woman star look pale and not suntanned—as is precisely the case in 'Lady L.' This can be achieved by the use of proper makeup colors plus use of the right color or colors in the costumes she wears—especially in those areas which will be close to her face.

"The small squares in the center of the panels in Chart No. 2 are all identical and are the same color as the makeup panel No. 3 in chart No. 1. Examination will show that when the surrounding color is white, as in panel A, the skin tone appears darkest—but when the small square is surrounded by darker tones, especially black, as in panel J, the skin tone appears pale by comparison," Daniels explained.

Tests Photographed

In the absence of full color reproduction of the charts here, the half-tone reproductions, we believe, amply demonstrate the purpose of Daniel's charts and what they achieved.

Daniels shot a demonstration reel of these charts, then on the basis of what the charts demonstrated, extensive photographic tests were made with Miss Lollobrigida wearing an all-white costume, and also costumes of various shades of pink. Following these, additional tests were photographed with her wearing costumes having dark colors around the throat, still others with black dresses. The results of these tests supported what had been demonstrated earlier by the charts. "It was only through use of the charts, however, that those involved with the problem could understand it," says Daniels "When demonstrated visually, both the problem and the solution were easy to comprehend." Daniels is grateful for the assistance given him in the preparation and photographing of the tests by makeup man Bill Tuttle and Ray Johnson, head

Continued on Page 370

NOTICE

Should reader interest justify it, American Cinematographer contemplates supplying full color photographs of the charts illustrated above at a nominal price. Request for color prints should be addressed to the Editor and reach his desk on or before June 25th

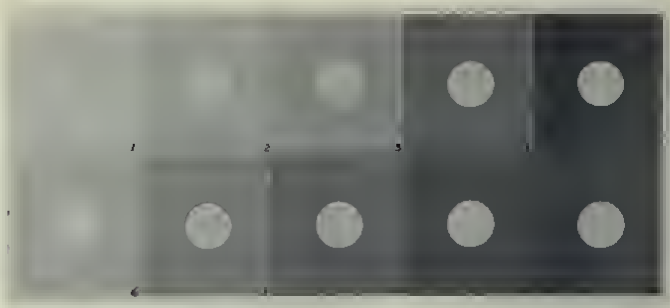


CHART NO 1 shows contrasts between the different makeup colors and the so called "white" of the human eye, represented by light colored disks in center of each of the square panels All of the disks are identical in color Panels 1 to 5 were painted with brown-toned makeup base, panels 6 to 10, in pink toned base, Although there is necessarily some loss of fidelity in above half tone illustration as contrasted with original chart, it nevertheless shows that in order to obtain the proper color relation between the skin and the "white" of the eye, makeup No 3 or No 7 would have to be used

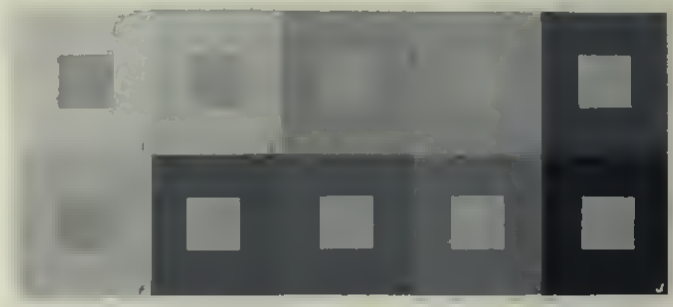


CHART NO 2—The small squares in center of each of the large squares are all the same color—that of the makeup in panel No 3 in chart No 1 above—and the surrounding colors, all different, represent costume and wardrobe colors The chart shows that when the surrounding color is white, as in panel A, the skin tone (makeup) appears darkest, and that when the surrounding color is dark or black, as in panel J, the same skin tone appears much lighter



GINA LOLLOBRIGIDA, star of MGM's forthcoming color production, "Lady L," whose renowned natural beauty will be further enhanced in this picture because of the special research and tests conducted by Director of Photography William Daniels, A.S.C.



MUCH OF the poetic quality of the photography of "Sumi San" is due to skillful lighting and color harmony in set design and decoration.

Filming "Sumi-San" In Japan

The color photography is reminiscent of "Gate of Hell" and "Rickshaw Man."

By HERB A. LIGHTMAN

When the Japanese feature film, "Gate of Hell," burst upon the cinema scene several years ago its jewel-like, shimmering pastel color photography created a sensation within technical circles of the motion picture industry throughout the world. To prove that this cinematographic triumph was no mere accident the Japanese followed it with other color masterpieces such as "Samurai" and "Rickshaw Man." Now, in the same tradition of breath-taking color photography, comes "Sumi-san," an independent feature produced and directed from his own original story by William E. Brusseau of Westminster Films, Pasadena, Calif.

"Sumi-san" is a true co-production in that it was not only jointly financed by American and Japanese interests, but utilized key technicians of both countries working together for the first time on an equal basis and in the closest artistic harmony.

The Story

Filmed in various locales of Japan and Hong Kong, as well as aboard a streamlined freighter on the high seas, the picture traces the bitter-sweet story of a Nisei seaman caught between two worlds —America, which is the only home he has ever known, and Japan, the country where his ancestral roots lie but in which he feels like an outsider. He falls



WHILE THREE members of cast look on, Producer-director William Brusseau directs a scene on deck of Chinese junk. Keeping close watch on action through finder of the Mitchell camera is cinematographer Junichi Segawa

in love with Sumi-san, a high-horn hut emancipated young Japanese beauty, who has fled the stringent restrictions of her sternly traditional parents to work as a hostess in a smart Tokyo night cluh. They fill a desperate void in each other's lives, hut they cannot hridge the gap hetween their two worlds—and so, inevitably, the film ends on a tragic, though hopeful note.

The Production Staff

Brusseau took with him to Japan a production manager, a husiness manager, make-up artist, sound engineer and several American actors. The Japanese co-producer provided the complete camera crew, art direction staff, assistants for the key American technicians, a technical crew averaging hetween forty and sixty men, as well as lahoratory processing facilities for the 90,000 feet of Eastman color negative and 60,000 feet of "daily" print stock, which was hrought from the United States.

The film's imaginatively beautiful photography results mainly from the artistry of Director of Photography Junichi Segawa, one of Japan's ace cinematographers who has filmed more than twenty color productions in that country, but who was executing his first color assignment for an American producer. Working closely with him as Supervising Art Director was Mitsuharu Hirata, famous in the Japanese industry as a lighting engineer. It is his skill with light and color harmony that lends the photography much of its poetic quality.

Brusseau is greatly indebted to Yoshige Uchiyama, a producer with Nan-Ob Productions of Tokyo, whose smooth-operating production staff worked out budget estimates in greatest detail. Further credit is due prize-winning Japanese director Heinosuki Gosho, who functioned as Chief Production Adviser as well as placing at Brusseau's disposal his first-rate production team.

The Japanese achieve their magnificent color photography despite the fact that they have had to make do with some of the most archaic lighting equipment. In Japan, use of arcs for set lighting is virtually unknown, and it is only recently that a few units have become available there. No arc lighting at all was used on "Sumi-san." The largest set lighting unit that was used was a 5,000-watt Senior Spot, and there were only a half dozen of these. The halance of the lights were 2,000-watt Junior Spots. With typical ingenuity the Japanese gaffer has turned this handicap to an advantage. Because he works with many small incandescent units he is ahle to exercise excellent control over the lighting, and can, in effect, paint the set with light, achieving a soft quality and producing the overall pastel effect that is characteristic of Japanese color cinematography.

Lamps Tested Constantly

Because power for the lights came from several different sources, maintaining uniform color temperature was a constant problem. One electrical assistant had the full-time joh of testing each lamp individually for color temperature and making the necessary corrections with colored gels. This, of course, was very time-consuming, hut it is also typical of the painstaking attention to detail characteristics of the Japanese film technician. As is true in other foreign countries, the American producer working in Japan must accustom himself to the fact that the filming operation will move much more slowly on every level than it does in Hollywood. However, this is more than compensated for hy the infinite care taken by the prideful film craftsmen.

Equipment Handicap

Judged by Hollywood standards Japanese equipment seems "medieval." For parallels they use any platforms or structural members that might he at hand. While the larger studios have their

Continued On Page 366

CAMERA SETUP in a Tokyo nightclub where a lengthy sequence of scenes was filmed for "Sumi San." To modify overhead lights for desired color temperature, sheets of tinted cellophane were mounted loosely in front of each lamp. (All photos by Westminster Films)



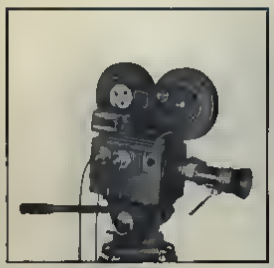
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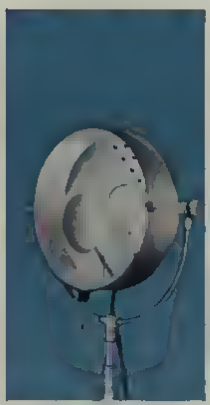
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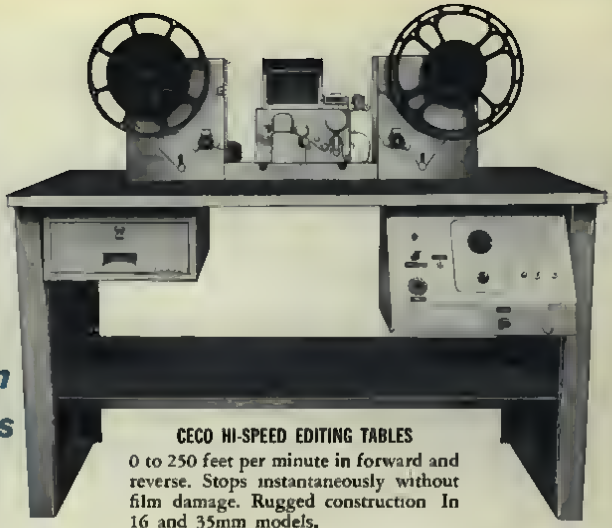
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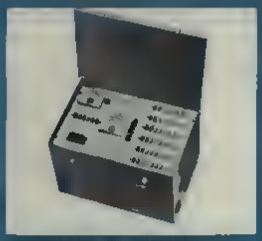


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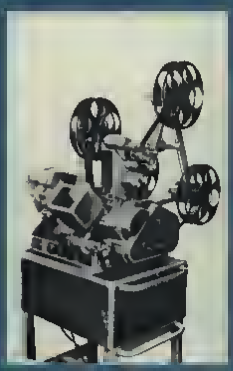
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AUTHOR STAN LIPINSKI, behind Mitchell-16 camera, photographs a scene for a television film produced by Moreland-Letchford Productions for Canadian Broadcasting Corp. Note fill light supplied by photoflood in clamp-on reflector in hands of an assistant at right.

Lighting Sets For TV Films

By STAN LIPINSKI

IN PHOTOGRAPHING *the "Heritage" series of TV films, produced in Toronto for the Canadian Broadcasting Corporation by Allan Wargon, Director of Photography Stan Lipinski sought to meet the technical requirements of television broadcasting without introducing major changes in established film-making technique, and at the same time achieve a photographic result compatible with both television and theatrical film requirements. How practical methods were developed to meet these quality requirements were outlined by Stan Lipinski in his initial article in our March issue. In this follow-up article, he elaborates on his method for lighting and photographing films for TV.*—Editor.

EVERY PHOTOGRAPHIC image embraced within a film frame is created by light in three forms: light falling on the subject, light reflected by the subject itself, and light originating within the scene. Within the film frame itself there are many objects — some forming the foreground, some the background, and some comprising the main subject or subject interest. The aim of the photographer is to arrange these subjects the way he feels it best suits the composition and mood he wants, or to arrange them in the manner imposed by the situation. There are usually a number of ways in which the desired effect can be obtained; however, the one in which we are most interested here is the result achieved through controlling the lighting.

Light Combinations Used

For a basic exposure it would be sufficient to place one powerful light source somewhere near the camera, which would result in a correctly exposed picture. However, the result would be flat and —at least for our purpose—unsuitable. In order to improve the pictorial quality so it would have a complete photographic range, it would be necessary to expose the object or scene to a combination of lights compatibly arranged. Lights which would comprise this combination are as follows:

(a) Key light—which controls exposure,

(b) Fill light—which controls the lighting contrast,

(c) Back light and rim light—which adds sparkle to the picture,

(d) Special effect light—as for example small eye lights which heighten facial expression.

Factors to Be Considered

The combined use of all these lights by a skilled cinematographer will produce a picture which is both pictorially and dramatically effective; but in order to satisfy the technical requirements of

photography, the following factors must also be taken in to account:

(a) Exposure index of the film used,

(b) Lighting contrast,

(c) Range of brightness.

In addition, such important factors as texture, color of set walls, faces with or without makeup, etc., must be considered.

To simplify this discussion of the different types of lighting for motion picture photography, we shall consider the subject in its three principle phases: (1) shooting on the sound stage, (2) indoor shooting with combined lighting conditions, and (3) exterior shooting.

Shooting on Sound Stage—(a) Sets

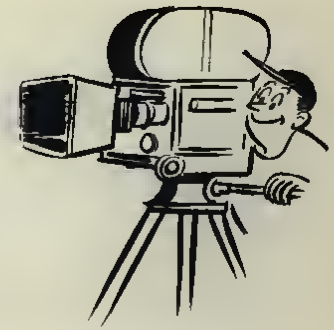
In the pre-production planning of television films, particularly with regard to the designing and construction of sets, the cameraman's opinion is essential. Most set designers know that the effectiveness of a set must be judged through the camera viewfinder. Still, many of them fail to realize that the effect of even the handsomest set, even when built prop-

Continued On Page 372



STAN LIPINSKI uses an incident light meter to check the light volume in foot candles for the position of each player on the set

WHAT'S THE ANGLE?



Your conception of camera angles and the way you employ them play an important part in the quality of your photography.

To THE UNINITIATED, "camera angle" usually means a camera tilted down sharply or up from a low vantage point. Actually, the term, as used in professional film production, refers to the position of the camera with relation to what is being photographed. Closeup, two-shot, medium shot, and long shot, therefore, are *camera angles* in the vernacular of the film maker.

In scripts for TV and feature films as well as for other professional motion pictures, the camera angle for each scene usually is thought out in advance and specified in the script—although it may be altered when it comes time to shoot the scene.

But where the industrial cinematographer, following a sketchy script, is left to his own to shoot a picture as he sees fit, his conception of camera angles and the way he employs them play an important part in the quality of his photography.

The Elementary Distinction

The most elementary distinction in camera-angles is between the long-shot, the medium-shot and the closeup. Of course, if you want to split technical hairs, you might name a flock of sub-varieties of each of these; but essentially, you'll still be dealing with closeup, medium-shot and long-shot. The long-shot is made with the camera far enough away from the subject so that the whole thing—subject and background—is fully shown in the picture. The medium-shot brings the camera closer—say close enough so that if you're filming people, you show about half the figure. The closeup takes both the camera and the audience close to the subject, so that if you're photographing a person, you fill the screen with his head and shoulders, or perhaps merely the head alone.

But that's kindergarten stuff; nearly every cinematographer knows what these shots are. Not so many, though, seem to know *how* to use them.

Well, in a long-shot, we show everything. If we're photographing people we show the people, and where they are in relation to their surroundings. In a medium-shot, we've moved up closer to

Continued On Page 374

Superimposing Sound On Tape

Re-recording and mixing is eliminated in this novel method for superimposing one recording over another for a composite sound track of commentary and background music.

NOTE: *In-plant film producers and others who record sound for their films on tape will find a practical and time-saving suggestion in the following article by J. Cattermole which appeared originally in the British publication,* Amateur Cine World, *for January, 1961. Although the idea was developed to simplify the production of composite sound for amateur films, it is nonetheless adaptable to professional 16mm film production.*—Editor.

MANY TAPE RECORDERS nowadays are fitted with some form of superimposing device—in most cases a removable link or switch in the lead to the erase head. Such a recorder, when switched to *Record*, is able to pass the tape past the erase and record with only slight erasure taking place. Slight erasure of the first recording is unavoidable since a small proportion of the high frequency erase signal has to be fed with the recording signal to the record head in order to give a satisfactory result. This is known as the bias.

In cine work, one often wants to record a musical background to a film first and then superimpose a commentary on it. A recorder already fitted with a removable link or switch will, of course, enable this to be done, but it is difficult to avoid a sudden drop in the level of the music before the commentator speaks, and a no less sudden increase afterwards. To correct these changes in volume, a simple variable control can be inserted in the lead to the record head to enable the first recording to be faded down at the beginning of the superimposed commentary, and then gradually increased again when the commentator finishes speaking. Fig. 1 shows the connections for the control: a potential divider (R1) inserted in the lead to the record head.

This control on the record head is, of course, used with the erase head switched out of circuit, or the link removed (Fig. 2). This recording bias control, plus the switching or un-linking the erase out of circuit, is all that is required for superimposition of, for example, a commentary on a previously recorded music track. As the recording bias control is brought up to maximum, the bias effects slight erasure of the music and gives the necessary drop in its level during passages of speech.

Some recorders have a 100% safety link—which can be removed when precious pre-recorded tapes are being played back. This link, when removed, ensures that no bias at all is fed to the record head, and no erase signal to the erase head—thereby completely preventing accidental erasure. On recorders fitted with this type of safety link, but no built-in superimposed control, it is necessary to leave the link in and then to add superimposition components as if the recorder had no link at all.

Recorders without a link in the lead to the erase

Continued On Page 364

FIG. 1. RECORD HEAD CONTROL

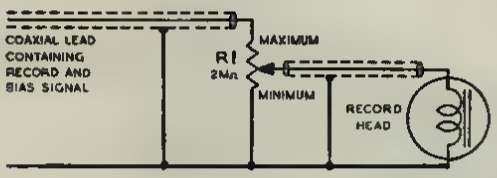


FIG. 2.

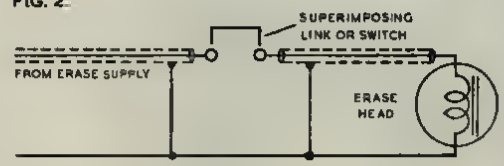
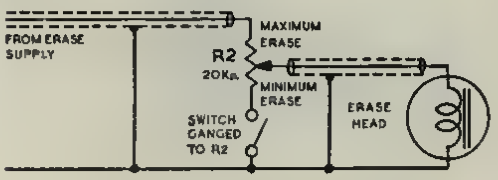


FIG. 3. ERASE HEAD CONTROL





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PHOTOGRAPHING an animated TV commercial with Oxberry equipment and bi-pack camera

Production Advantages In Limited Animation

New technique reduces number of operations all down the line, resulting in faster production at less cost.

By LOWELL A. BODGER

THE CURRENT BOOM in animated TV commercial production and the increasing number of television programs which are either wholely or partly animated, is to a great extent the result of an improved, simplified animation technique that enables studios to produce animation in quantity at higher speed and at lower cost. The technique is known as *limited animation*—not really new, but which attained its present importance comparatively recently.



IDEALLY SUITED to limited animation is this scene from a Walt Disney production. Only the flags and horses' legs were given motion, while the background moved behind the subjects. (Photo © by Walt Disney Prodns.)

Basically, limited animation differs from full animation in that the latter requires a separate drawing or set of drawings for each frame of film, whereas limited animation may use the same drawing in a different position for succeeding frames of film. Where actual movement is required in limited animation, only that segment of the body or object which will move is animated on a separate cel level, while the static portion of the body remains unchanged on the original cel.

The merits of this system are obvious. Since movement is reduced to the essentials, less time is spent calculating, drawing and animating body movements. A walking figure in limited animation, for example, appears as a simple line drawing, with its legs undergoing a repetitive motion while its body remains still. Should the subject speak, the actions of the mouth, and possibly the eyes, are animated on another cel level, while the same body remains. Another practice common in limited animation is photographing two successive frames of film to each setup in instances where character animation does occur. This reduces the number of animation drawings by half, while only slightly affecting the smoothness of action.

With these simplifications in animation procedure, the task of making the actual animation drawings becomes more or less mechanical, leaving the artist's mind free to invent more meaningful characterizations. The saving inherent in limited animation, therefore, is in the time saved by the animator on the original drawing, not necessarily in the number of cels inked and painted, nor in photographing the cels in the final phase of production. Realism is put aside, and a new freedom of design and expression is achieved. More creative animation usually results from the use of limited techniques, since stylized drawings and backgrounds of a particular period may be used in conjunction with characters who are designed in, and even move in, a particular exaggerated manner.

The usefulness of limited animation in theatrical, educational, and television films is unlimited. Almost half of all the "spot" commercials seen on television are animated, or contain animation of some kind. The use of limited animation enables the client's message to be put across without distraction, and in a minimum of time and words. Humor and person-



EXAMPLE OF COMPLEX animation using a single cel. Four groups of papers are animating downward from their source to the four piles below. All papers are animated fully, although the effect is accomplished by panning the cel horizontally. (See "One cel Complex Animation," by Leon S. Rhodes, Sept. 1960 American Cinematographer.)

ality can be injected in these commercials in large quantities at the discretion of the advertiser.

The exact budget savings resulting from the use of limited animation depends, of course, on the degree of limitation. The term "limited" refers to a wide range of technique, ranging from just one step short of full animation to one step above no movement at all. In the case of a one-minute commercial, the cost for full animation will be approximately $14,000, while a saving of as much as $10,000 will be had if limited animation is employed. A twenty-second spot will cost from $1,800 to $4,000, depending upon the technique used and the degree of animation. Animation of a large number of subjects, where necessary, or use of single-cel complex animation, where applicable, will tend to raise or lower prices respectively. (Costs quoted are for black-and-white, 35mm, and include sound track.)

The Cost Factor

It costs approximately twenty times as much to produce the average five- to six-minute animated short subject today as in the 1930's. The result: much fewer cartoons are being made for theatrical release (many that are shown in theatres today are revivals of films made up to six years ago), and those animated short subjects made today must utilize limited animation either partly or fully. A short subject with limited animation throughout may cost $20,000 less than one featuring full animation. It is the function of cartoons to evoke laughter, and it is most interesting to note that the actions of limited animation characters, combined with simple backgrounds, are often more effective in conveying humor than characters whose actions and settings are supposed to be an imitation of reality. A well-done job of limited animation represents a detachment from reality, and in the field of cartoon entertainment is superior to full animation in both practicality and economy of production.

The Forerunner

Among the first studios to put limited animation into use on a full-scale basis was U.P.A. Pictures. The introduction of a new style of design for theatrical animated short subjects met

Continued On Page 371

THE ANIMATION FIELD

■ A SAVING of one-third in the number of cells used in animated film production has been developed by Technamation Films, Port Washington, N. Y., according to report in *Telefilm* (Vol. 5, No. 1). Motion at any speed and in any direction can be obtained using still transparencies through the new process, which was engineered and patented by Technical Animations, Inc., and assigned exclusively to Gold Medal Studios.

Motion effects, according to *Telfilm*, are achieved by affixing to the back of the transparency or animation cel segments of transparent colored acrylic plastic arranged in pre-determined patterns, according to the motion required in the illustration. In the same manner, the colored plastic bits can be arranged to add "unnatural" motion effects to attract attention, sustain interest or enhance impact.

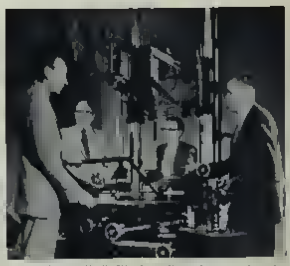
After the appropriate segments of colored plastic have been affixed to the back of the cel, a rotating Polaroid filter is interposed between the light sources and the cel in such a way that all light reaching the treated areas of the cel is polarized. The light thus transmitted through the cel produces the illusion of motion. The Polaroid filter is continuous and free from any flicker or stroboscopic effect.

The new process, said to be ideally suited to production of low-cost TV spots, makes liquids appear to flow, gears rotate, propellers turn and can produce special optical effects such as combustion, explosion, smoke and clouds.

●

■ NEW, IMPROVED animation equipment that features electronic control of many of the key operations in photographing animation cels, was installed recently in the studios of Reid H. Ray Film Industries, St. Paul, Minn.

The electronically-controlled animation stand, which is pictured above, has eight computers which enable operator to achieve accuracies of one one-thousandth of an inch when movements of the camera and table range from a 36-inch layout of art down to fractional segments as small as 3-inches. Using the



JOHN OXBERRY (left) describes improved animation equipment he designed for producer Reid H. Ray (2nd from l). Looking on are animation technicians Gordon Ray and Andy Chandler.

equipment's electronic "joy-stick", movements of the table carrying the animation cels and art backgrounds may be controlled throughout a 360 degree arc.

The new installation will be utilized by the Ray studio to produce cartoon animation, technical animation, photo-montages, creative title designs, and optical effects. A feature is a dual-purpose Oxberry animation camera which can be used for 35mm and 16mm film interchangeably. Only a few minutes time is required to replace the complete film transport system within the camera. A set of three lenses, which are interchangeable, serve both sizes of film.

●

■ BASIC TITLING AND ANIMATION is title of new booklet written to help makers of industrial, educational, TV and other applied motion pictures to produce more effective titles and achieve competent animation. Slide makers will also find the titling tips useful.

Published by Eastman Kodak Co., Rochester, N. Y., the booklet's titling section illustrates and describes how to prepare art work; contrasts "good" and "bad" title composition; and discusses lighting, centering, and focusing.

The section on animation describes some special equipment (much of it simple) and animation procedures, including ways to animate three-dimensional objects, lines, graphs, puppets, and paper cutouts. This Kodak booklet, identified as No. S-21, contains many illustrations and sells for only 50¢ at most Kodak dealers.



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KODAK'S NEW RAPID PROCESSOR

Processes 16mm B&W film at the rate of 36 feet per minute, using viscous solutions applied at high temperatures.

By VAUGHN SHANER

Motion Picture Film Department, Eastman Kodak Company, Hollywood, Calif.



THE EASTMAN Viscomat 16mm film processor is about the size of a four drawer filing cabinet

THE DAY MAY NOT be very far off when a cinematographer will be able to stop by his studio's projection room on his way home in the evening and watch screenings of the footage he shot that same day.

If he wants to, the cameraman of the future will be able to look over the scene he shot a minute or two before, to decide whether retakes will be necessary.

This is no wild pipedream. The first generation of the "hardware" which will make this possible has been introduced and demonstrated. Deliveries will start early in 1962.

Touching off these ideas of new dimensions in motion picture production was a product demonstration at the May 8-11 meeting of the Society of Motion Picture and Television Engineers in Toronto. The machine is the Eastman Viscomat Processor, Model 10P. It handles 16mm black-and-white positive film at 36 feet per minute (the standard projector speed).

The big potential breakthrough promised by the new processor lies in two equally-important capabilities of the machine:

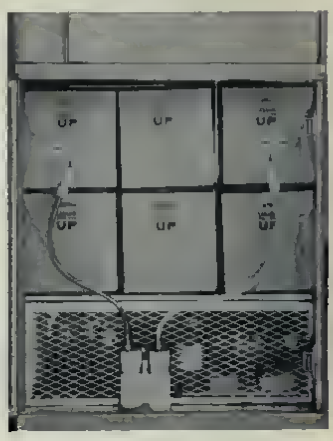
1) Motion picture film is completely processed, dried and wound on a takeup reel in approximately one minute after it enters the machine.

2) Quality of film handled by these rapid techniques compares favorably with results achieved under the usual trade conditions. There is no com-

Continued On Next Page



VIEW OF an operating cross section of the Viscomat processor. Film enters machine through chamber at left; processing washing chamber is in the center; and drying is done in the chamber at the right



THE VISCOUS chemicals, drawn through puncture-type probes inserted into the Cubitainer packages, are fed continuously into the system. Chemical sources can be shifted without shutting down the machine.

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FULTON Processors are completely daylight operated, portable, operate from any 115 volt a.c. outlet, and use ¾" garden hose for water and drain connections. There are **no installation costs!** As little as 16 ounces of working solution are required and replenishment is completely automatic. Water requirement is 2 gallons per minute, or less.

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KODAK PROCESSOR

Continued From Preceding Page

promise of quality in either grain or resolution because of the rapidity involved.

Adding still further to the potential benefits which the machine offers the industry is the compactness of the Viscomat. It is about the same size as a regular four drawer file cabinet. It requires no liquid solutions or replenishment procedures. Water consumption is low, approximately 0.8 gal/min. The Viscomat is hooked up to a single source of water and to any regular drain through simple hose connections.

The rapid, high-quality performance of the unit results from the successful application of a new technique for applying processing chemicals. As the name of the Viscomat implies, the machine uses viscous type chemicals. The technique employed by the machine eliminates the usual problems of chemical control.

In most situations, the Viscomat Processor can be operated in a normally-lighted room. Film is fed into the machine from a 1200-foot magazine. Future plans may call for the development of adapters which could make it possible to run film through the processor directly from a kinescope recording camera or from printers.

The developer is brought to processing temperature before it is applied. Processing takes place in a saturated atmosphere at 125° F, ±½°. These conditions are accomplished by pressurized water sprays which saturate the processing chamber with water vapor at the processing temperature of 125° F, eliminating the cooling effect of evaporation.

The chemicals themselves have a consistency similar to honey. Developer and fix are drawn from sealed Cubitainer packages stored within the machine by means of a puncture-type probe which is inserted into corrugated, plastic-lined chemical containers. The chemicals are then drawn into the machine from the Cubitainer cartons by a pump. The system contains a reservoir which permits changing from empty to full Cubitainers without interrupting the process and also serves to eliminate air from entering the chemical feed lines.

The viscous chemicals are applied to the film through special extrusion



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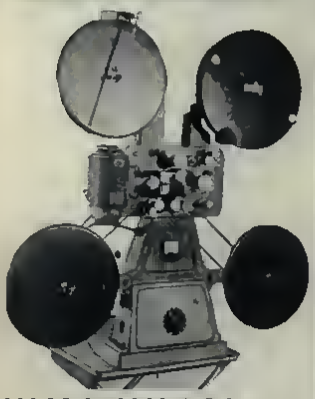


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Key to the consistent quality of this processing technique is that fresh chemicals are applied at all times. This method sidesteps any problems which might arise with the mixing or replenishment of chemicals. Until the chemical touches the film, it is contained completely in a closed system.

Following the wash after both developing and fixing, separate air squeegee operations are performed. Final drying is done in a separate chamber of the Viscomat. After the film has been dried—approximately 60 seconds after it entered the processor—it is automatically coated with lubricant and wound onto either of two alternate 1200-foot take-up reels which are provided so that the machine can be operated continuously. A cutting device is built into this section to aid quick transfer from one reel to the next.

The Viscomat may be shut down or started up in a matter of minutes. When a batch of film has been run and the operator wants to shut the machine down, he presses a single switch on the control panel which stops the machine and causes a complete wash-down of the interior of the processing chamber. Start-up time is only five to ten minutes—the time required to bring the processing chamber from inactivity to operating temperature.

Initial applications for the Viscomat are expected to be in the processing of kinescope recordings and in situations where producers have intermittent volumes of 16mm black-and-white prints to make. In television recording, it is expected that the machine will be used in the entertainment field and in closed-circuit situations such as television surveillance in defense and industrial installations.

Films such as Eastman Fine Grain Sound Recording Film, Type 7373, and Eastman Television Recording Film, Type 7374, can be run through a kinescope recording camera and processed by the Viscomat. These two films, along with Eastman Fine Grain Release Positive Film, Type 7302, have been tested extensively through the Viscomat system. These tests have been compared carefully with identical materials run through high quality conventional processing facilities. Results were comparable for uniform density, contrast, sharpness and grain. While the Viscomat has been designed initially to handle 16mm black-and-white positive-type films, work continues on the processing method for negative films.

Production models of the Viscomat, which will sell for about $12,500 in the U.S., will be available for delivery approximately January 1, 1962. ■

SUPERIMPOSED SOUND

Continued From Page 356

head (only) can have a *level of erase* control fitted, as shown in Fig. 3. This can be used to effect a gradual and complete fade-out or fade-in of an original recording—sometimes a very useful facility. It can also be used in conjunction with the record head control described above, to obtain more reduction in level of the background music than is given by the recording bias alone.

The switch depicted in Fig. 3 should be combined with the control so that, when the movable arm of the control is at the *Maximum Erase* position, further rotation of the knob to the left opens the switch, thus restoring the erase circuit to its original state before the control was inserted.

The first recording is made in the normal way with the record head control set at *Maximum*, the erase head control set at *Maximum Erase* and the switch open. The tape is then rewound and the recorder switched to *Superimpose*. If it is not fitted with the superimposing switch, the erase head control should be set to *Minimum Erase*. The tape is now played back, and where it is desired to superimpose the commentary, the record head control is turned to *Minimum*, the recorder switched to *Record*, and the record head control gradually turned to *Maximum* before the commentary is spoken.

After the required section of commentary has been spoken, the record head control is gradually returned to *Minimum*, the recorder switched back to *Playback*, and the record head control turned to *Maximum* once again. (It will be noticed that since the

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main record/playback control is only switched when the record head control is at *Minimum*, i.e., when the record head is short circuited, no switch clicks are picked up on the tape. (This procedure can, of course, be followed to avoid switch clicks in first recordings also.)

The recorder on which these modifications were carried out has a Mullard tape amplifier and a Truvox deck which uses high impedance heads; the values of R1 and R2 shown in the diagrams were found the most suitable.

R1 should preferably be a potentiometer, with an antilog characteristic; the *Maximum* position will then be in the extreme clockwise position of the control. If, as in our case, a potentiometer with a log characteristic is used, it should be wired so that the *Maximum* will be in the extreme anti-clockwise position. A potentiometer with a log, rather than a linear characteristic is desirable, since it enables the fade-out and fade-in of the first recording to be more gradual. R2 should also, if possible, be an antilog potentiometer with a single pole switch attached, but it may be difficult to obtain, and we should perhaps add that one with a linear characteristic worked just as well on our recorder.

With a tape deck using lower impedance heads, R1 could be in the order of 100K ohms, and R2 about 5K ohms. One cannot, however, lay down hard and fast rules about these values for much depends on the recorder. Too low a value of R2 could prevent the high frequency oscillator from working, and an unsatisfactory recording would result. To ascertain the impedance of the heads, consult the manufacturers; one should not attempt to measure their resistance with a D.C ohm-meter, or the heads will be left magnetized, and this will damage subsequently-played recordings.

With regard to the wiring, the coaxial leads to the heads were simply broken, and the controls inserted in the side of the wooden cabinet. If the leads have to be extended, be sure to use screened cable to minimize any hum pick-up—and prevent instability in the recorder. In the case of R1, it was found necessary to fit a 4-in. x 4-in. piece of aluminum screening around the control to prevent hum being picked up while it was being used.

When the device was working, we found that it was not necessary to wait until the record head control was at the *Maximum* position, i.e., full bias on the head, before inserting the second recording, so it was possible for continuous sound effects to be faded in and out at will, with the first recording reducing in level in sympathy with the increase of level of the second. But the record head control should be left in the *Maximum* position when a recording is played back, otherwise hum will be heard. ■

FILMING "SUMI-SAN"

Continued From Page 351

versions of the Hollywood crab dolly and camera boom, the independents use makeshift perambulators pushed on wooden dolly tracks made of planks joined together. Before a dolly shot is made, an assistant with a carpenter's plane patiently smooths down the joints in the track so that dolly movement will be smooth. The important point is that none of this is apparent in the final result. What reaches the screen is a product having superb technical and artistic finish.

"Sumi-san" owes much of its visual beauty to the striking sets designed by Totesu Hirakawa and his associate, Masao Yamazaki (who designed the sets for the Hong Kong sequence of the film). The handsome interiors include modern apartments in Tokyo and Hong Kong, a country inn, and a private residence belonging to the parents of the heroine.

But the most outstanding achievement of the art direction staff was the creation on the studio stage of "exteriors" so real in design and detail that they intercut perfectly with actual establishing exteriors and defy detection by even the most sharp eyed technician. One such setting depicts a shrine set in a forest glade near Kyoto. This set was used for several sequences supposedly taking place in spring and autumn. Since all of the filming was done in summer, considerable alteration was necessary in shooting the actual exterior establishing scenes. To denote spring, several truckloads of live, out-of-season spring plants were skillfully transplanted to the area. When filming of this sequence was completed, a crew of twenty men took over and swiftly changed spring to autumn. Armed

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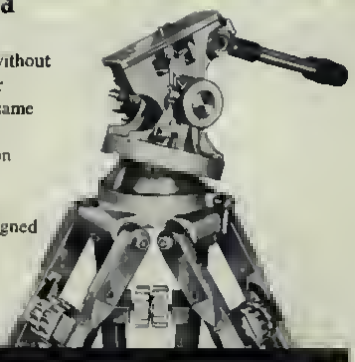
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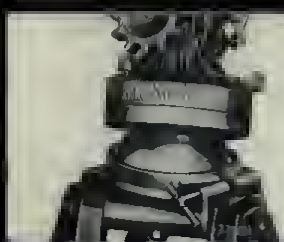
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with spray guns mounted on long poles, they sprayed the foliage with true fall colors—subtle oranges, yellows and reds, using easily-removable water colors. Truckloads of autumn leaves were brought in and scattered realistically on the ground.

Then, in order to more efficiently shoot dialogue sequences in this setting, an exact duplicate of a large area of the forest, complete with shrine, was built on the sound stage. The terrain was reproduced down to the last detail, the leaves were painted to match, and one man was assigned to plant living moss on the shadow side of the shrine, rocks and lanterns appearing in the scene. The cultivation of moss is a high art in Japan—one temple in Kyoto has thirty-two different species cultivated on its grounds—and the moss expert on the set scurried about before each take watering the moss so that it would look live and photogenic for the cameras. During shooting of the autumn sequence, a corps of special effects assistants on the catwalks overhead dropped leaves on cue—being careful not to detract from the action. This added effect lent an authentic and lovely mood to the sequence.

Similar artistry was brought into play in a sequence taking place in a Japanese garden at night. A beautiful exterior set complete with exotic plants, a waterfall and a shimmering pool was constructed on the stage—the entire vista softly suffused with moonlight, an illusion difficult to create without the use of arcs. The final haunting touch was to be provided by fireflies, their tiny bluish tail-lights glowing on and off as they glided about the foliage. It would have been impossible, of course, for the color cameras to pick up the dim glow of actual fireflies—to say nothing of the difficulties that would have been encountered in attempting to ride herd on these peripetetic creatures. However, a perfect illusion was created by using high-intensity electric bulbs, the size of match heads, suspended on fine black wires which also conducted the current. A crew of technicians, expert at manipulating such effects, created an authentic imitation of the flight pattern of fireflies fluttering from bush to bush around the pool and waterfall. This exquisite touch adds immeasurably to the magic of the evening scene.

Several important sequences take place in a cabaret where the heroine works and where, inevitably, the boy

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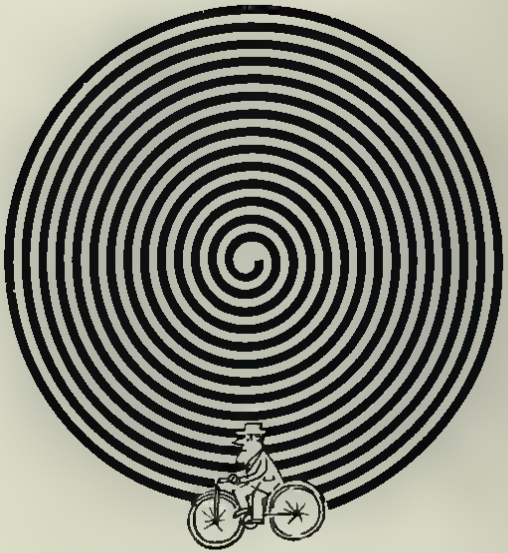
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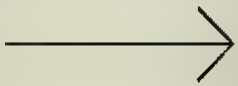
in the story meets the girl. It was decided to shoot this action on location in an actual Tokyo night club, the famous Benbasha (which means "Red Mill" in English or "Moulin Rouge" in French) The main difficulty encountered here was that the ceiling of this sprawling room was only eight feet high, and the walls were covered with black velvet. There was almost no place to mount lamps needed to artistically light the three hundred people in the scene. Standard Mole-Richardson lighting units were set up behind the camera, but the far reaches of the set could only be lighted by concealing small, transformer-operated Japanese lighting units (similar to Colortran equipment) in strategic spots. Electrical power for the operation was provided by a former U.S. Army generator modified to put out a stepped-up load of current. Besides plot action, several spectacular choreographic routines were also shot in the cabaret

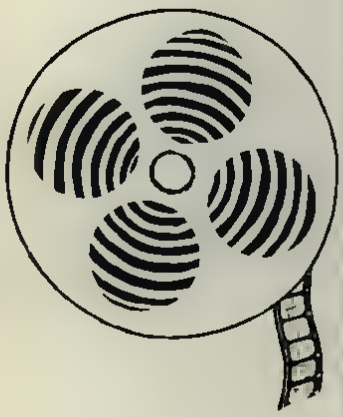
Sequences at sea were actually shot aboard the freighter Vander Hagen of the Royal Interocean Lines as it made its run from Hong Kong to Manila and Manila to Kobe. Since the cast and crew of the picture comprised almost the entire passenger list (there was only one other passenger), the captain was most obliging in making concessions for the filming. He arranged to have power needed to run the equipment available at any place on the ship. When the director selected a shooting area, the captain obligingly turned the ship at an angle to provide the best light. He used the ship's radar to locate a rainstorm so that a photogenic rainbow could appear in the background of one scene. And he once turned the ship 180 degrees off course to enable the camera to capture a sunset over the starboard bridge. An observer flying overhead would undoubtedly have been startled to see the ship describing figure eights all over the South China Seas in order to accommodate the demands of the camera.

"Sumi san" was photographed in Scanoscope, an anamorphic lens system having a 2 to-1 aspect ratio and was developed by Scanoptic, Inc. of New York The system (which provides a wide-screen image of outstanding sharpness, clarity and fidelity of reproduction) was designed as a lightweight auxiliary unit which could be used interchangeably with standard



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motion picture lenses of 40mm, 50mm, 75mm and 100mm focal lengths. A special gearing system allows the unit to be tied in directly with the follow-focus mechanism of the Mitchell camera merely by engaging coupling pins and tightening two thumb screws. It is probably the simplest and lightest weight anamorphic system yet developed.

The Scanoptic corporation is doing extensive work in the development of anamorphic systems for gun camera mounts, as well as for wide-screen television. Its president, Dr. Franz Ehrenhaft, felt that the work of Japanese cameramen on "Sumi-san" would provide an excellent showcase for the new anamorphic system and so be extended fullest co-operation to the producer and made the unit available at a most nominal cost.

Processing of the Eastman color negative and daily prints was done by the Far East Laboratories of Osaka This lab functions as the Eastman representative in Japan and has an excellent reputation for careful processing of color negative. Its liaison technician, Tadao Ueda, has worked with Eastman color experts in the United States and is highly regarded by them. Working closely with the American production company, he supervised processing of the film and facilitated delivery of it through customs.

Titles and optical effects (including complicated oil dissolves) were executed by a relatively new organization, Modern Film Effects. The General Film Laboratories of Hollywood worked with special effort to realize in release prints the quality insinuated into the negative and to produce a final result compatible with the negative processing of the Japanese laboratories.

For producer-director Brusseau, "Sumi-san" is a doubly rewarding achievement, for not only is it a visually beautiful film, but also a highly successful experiment in combining Japanese cinematic artistry and American production know-how.

"In addition to technical excellence, we believe this combination lent the film a higher degree of authority as to accuracy in all phases of Japanese life," Brusseau maintains. "In the past, many American films have been notoriously inaccurate in reflecting the Japanese character, culture and way of life. We avoided this pitfall by giving the Japanese technicians complete expression on elements which they knew best. As a result, customs, settings and costumes are completely authentic. In the Japanese film industry there are even rigid conventions as to the types of camera angles used to express certain emotions and actions. We found these traditions quite compatible with good dramatic technique and used them extensively By and large, the Japanese film industry is greatly indebted to its American counterpart and has a high regard for American technicians, particularly cameramen, because of their advanced technique. In seven months of working side-by-side with Japanese film craftsmen, mutual respect and co-operation resulted in a completely harmonious relationship and, I feel, a significant step forward in better understanding between peoples of different countries and cultures." ■

MAKEUP TESTS

Continued From Page 349

of the camera department at MGM.

Pink Tone In Prints

When screen tests made earlier of Gina Lollobrigida were shown to Director Cukor in the studio projection room, he had insisted that she looked suntanned.

And she did, on the screen, Daniels agreed. Color film, he points out, is not perfect due to certain limitations in the dye system. Often women's skin tones appear on the screen a little pinker than they really are, or appear on the set. Its something that is sort of built into present-day color film processes Most color film laboratories slightly intensify the pink tones in the printing procedure This is because most release prints are made for exhibition in theatres having high-intensity arc projectors. The light from these arcs is substantially bluish, so the laboratories intensify the pink in the release prints on the theory that the blue light of the high-intensity arcs will wash it out, resulting in more natural flesh tones.

Charts As Useful Tools

The object of making the color charts, Daniels said, was not to teach directors of photography what they have known for years, but rather to make available a tool that might be

useful in their relationships with art directors, costume designers, producers and directors.

"I am concerned," he says, "that so few people know how complex is the job of the director of photography. Very few have any idea that so much thought goes into a simple thing like the color of makeup a star should use. Of course the makeup people of the studios know, as do most of the costume designers, because the makeup problem is basic. Like any fundamental law. Once you know the fundamentals of any art, you must start there; you cannot be ignorant of these fundmentals and be successful" ■

LIMITED ANIMATION

Continued From Page 359

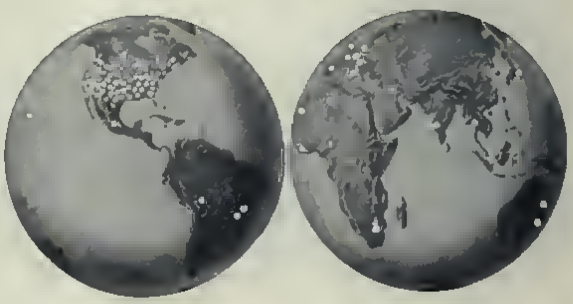
with favorable public reaction when U.P.A. released its first "Mister Magoo" film about a decade ago. In addition to numerous short subjects, U.P.A. has produced several animated featurettes and one feature-length animated film, each endowed with the same flat, free-style artistic treatment. The marked individuality of U.P.A. productions is combined with a favorable economy of operation, as the average cost of a U.P.A. short subject runs only $30,000.

Walt Disney productions, on the other hand, represent the direct opposite approach to cartoon design. For thirty years the Disney organization has been working toward achieving near-reality in its films, by putting cartoon characters in three-dimensional, sealed settings and by using full animation almost exclusively. In feature-length films this style has its place, but its application to the average short subject has drawbacks, both financial and story-wise. However, superb use has been made of limited animation in Disney science features such as *Man In Space, Mars And Beyond*, where highly detailed illustrations of space operations were depicted using sliding cels and complex multiplane animation, with a limit on subject action.

As a comparison, let us take two fairly recent feature-length animated films: U P A.'s *1001 Arabian Nights*, and Walt Disney Productions' *Sleeping Beauty*. Both had approximately the same running time, both were in color. The Disney film was photographed in widescreen Technirama, while the U.P.A. production was in standard format 35mm. U.P.A. employed its simple, well-known animation style involving flat, abstract, vividly colored backgrounds and limited animation, while the Disney studio aimed for life-like perfection of animation, utilizing in some scenes as many as a half-dozen planes of movement with several cel levels of full animation on each. There is no question as to the artistic superiority of the Disney film, but *Sleeping Beauty* took more than seven years and $5,000,000 to make, while *1001 Arabian Nights* was only two years in production at a cost of $2,000,000.

Innovations such as super-widescreen and six-channel stereophonic sound tend to make little difference to juvenile audiences who, for the most part, accounted for much of the box office earnings on each of the above. Nor, unfortunately, does it matter how far the technical aspects of animation have been advanced, as is a characteristic of almost all Disney films. So we see the use of limited animation as a factor leading to higher profits in the field of feature-length

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The economic advantages should not lead the film producer to disregard the factors which determine what grade, or degree, of limited animation should be employed in a commercial, a short subject, or a feature. While there are certain types of subject matter which are ideally suited to treatment in limited animation, there are also subjects which, when handled with such techniques, lose value and take on an undesirable, crude appearance. Indeed there are many commercials which should not be animated at all. But no matter how limited the animation, a well-executed job is still expensive and requires good artistic taste in large measure.

Since the motion picture industry is a highly-competitive business, time-saving and cost-reducing measures will continue to be a deciding factor in determining various practices. Limited animation has proven its efficiency in these respects, and is therefore destined to come into ever-increasing use in the future. ■

LIGHTING FOR TV FILMS

Continued From Page 355

erly for camera angles, can be wasted if there is no way provided to properly light it in a cinematographic way. Indeed, much money and effort is often wasted in this way. But what is most important in set design and construction is the color scheme of the set and the way it is painted.

The prevailing attitude among many producers and directors is that motion picture sets should be built to enhance the atmosphere for acting, and while this certainly has a bearing on the final result it should also be possible to reach a balance between the set's eye appeal in color, design and photographic values. I know of only a few colors that can be used without risk on sets for black-and-white photography for television. From the photographic point of view, the simplest and safest color is neutral gray, but as this color often finds objection among actors its eye-appeal can be enhanced by the addition of dark shades of blue and brown for shadow effects. Still other colors which can be recommended are brown, pink and orange. As these colors are harmonious with the artists' faces, their use in set decoration makes it possible to obtain correct exposure readings with conventional exposure meters and also permit fairly correct evaluation of the set and lighting when a contrast viewing glass is used.

Besides considering the colors to be used on walls, etc., care should be exercised in the design and construction of sets to insure that there will be no unnecessary details projecting from wall surfaces. Thus window and door frames should be kept as shallow as possible; if these extend very far they will cause deep shadows and thus complicate the lighting, possibly increase the range of background illumination beyond the required squeeze range. This also applies to the furniture used on the set. Dark furniture placed against the background, and wood panel wainscoting (painted or real) require extra set illumination.

Use of extremely bright objects in a set, such as shiny metal props, etc., should be avoided because they can cause unlooked-for glare and adversely affect meter readings and consequently the effective lighting range.

Let me emphasize here that the precautions cited above do not imply that the aim should be for flat lighting. Indeed, shadows can and should be employed naturally and effectively, but they must never exceed the range.

After the proper range of set lighting has been established, there is the all-important matter of "reference white" to be established in every scene. This, too, requires careful consideration in the pre-production planning of television films. If the director requires a closeup, with part of the set as background, and there is no bright object within the frame, then something must be done to bring the background up to full photographic scale —either by painting in highlights or by calling on the prop man to introduce a suitable bright object into the frame.

(b) Setting Lights:

Once sets have been looked to, the cinematographer can move closer to the essential part of his work—setting the lights. Here, planning in advance is likely to yield a consistent quality, and it will certainly save the production money. I divide my work into three stages: planning, building lights, and measuring and adjusting lights. For the first stage, which usually takes only a few minutes on the average set, I always try to be by myself. The planning I usually try to do the day

before I place the lights, if the set is ready, or before the rest of the crew comes to work.

Before coming on the set, the cinematographer presumably knows all the movements and details of the action, having read the script and discussed matters with the director. Thus informed, he then decides the character and mood of the lighting he is to employ, and the kind and the direction of the light to be provided by the main sources—keeping in mind the squeezed range of illumination established for television film photography.

As explained in my earlier article, we had previously established that the final range on the TV screen should not exceed 40-to-1, and that because of the several factors which influence this, the range of brightness in the scene should be approximately 16-to-1. In the studio, where everything is controlled, this presents no problem. But we must keep in mind that the studio scenes may have to be matched with scenes shot on location, either exterior or interior, where the existing conditions may not readily lend themselves to the ideal short range of illumination. When this happens and nothing can be done to improve the conditions, I tend to compromise and increase the range by half a stop on the Weston meter—which then gives a range of 4½ stops or 24-to-1.

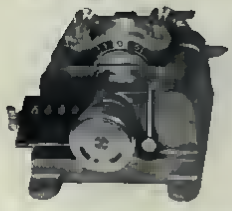
In terms of standard photographic technique a range of 24-to-1, let alone 16-to-1, is quite low for black-and-white photography. This range ordinarily is suitable for most color photography, but there is little to be gained by making comparisons with color because the problem is altogether different. Color forms a picture by itself even when the light is quite flat.

To achieve an approximate effect in black-and white photography the light must be varied. Every cinematographer has his own method of doing this, therefore I will make only a few general suggestions. Avoid large, evenly-lit surfaces or areas; try to break up large areas into smaller patches of light, especially when the area is the background in medium or close-up shots; for all shots close enough to employ them, use back lights and rim lights—the so-called "kickers"—which add sparkle to a scene.

Ordinarily, daylight scenes do not present much of a problem as regards illumination range, but an effect of

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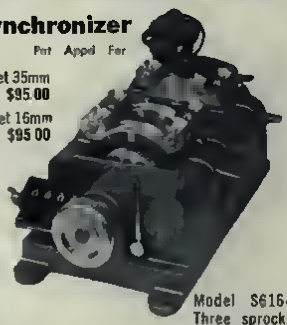
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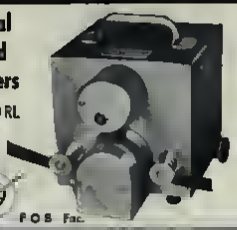
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light on walls can make the photography richer in tone, and can also be used to provide the vital "reference white."

There is a strong attitude among some film makers that night scenes should be avoided because they are unsuitable for television. This thinking stems, I believe, from the old movie tradition that a night scene should be an under-exposed scene, a tradition which owes its origin to the fact that in the early days of film making under-exposure was the only way—and it is still the cheapest way—to get a night effect on film. This method is still used to some extent in shooting theatrical films, and it is perfectly applicable to the medium because of the size and reflective qualities of the screens on which such films are projected

Effective night scenes can be produced in television films by other means. First, let us consider what any scene is in strictly photographic terms It is a composition of light and dark areas. A predominance of the lighter or whiter areas gives the effect of high key photography, and where large dark areas predominate in a scene, the photographic result is low key. But the range in between the lightest and darkest areas should be the same in both cases. To create the effect of night or low-key photography, it is only necessary to increase the number of dark areas in the scene compared with the light areas. This can be achieved in a number of ways, a few of which will be cited here:

Place in the background an effective source of light which will give a literary explanation of the mood of the scene, and heighten its effect with shadows. Use side light rather than front light; the latter throws too much general illumination on the set. See that the deepest shadow is within the range in relation to the highlights. Faces should be lit more from one side than the other, but they should have the same brightness as faces in an ordinary scene when a light-reading is taken from the brighter-lit side.

In general, I favor the practice of selective lighting because it affords complete control of every lighting unit and therefore of all the different phases of the set illumination. This applies particularly to TV film photography, where we require a restricted lighting range and an altered balance of the gray scale. In fact, the desired result can only be achieved when the illumination on every part of the scene can be controlled.

In following closely the principles of selective lighting, I always try to establish the basic lighting mood of entire sequences through the direction, intensity and contrast of the light, by setting all the lights for the largest scene in the script. This has nothing to do with the schedule of shooting, although it may be advantageous to the producer in saving time later on, but not necessarily. I find it makes it much easier to begin with the whole and then work down into the parts. Thus I always start by setting up the lighting units for effects such as sunlight or light from windows, practical lamps, etc. Next I light the walls and the various pieces of furniture. Only after all this is completed do I set up the lights for the artists. I have no set pattern as to which lights I use for walls or furniture or for artists' faces; this depends on the action. But in general I try to work as much as possible with the set lamps suspended from overhead or mounted at top of the walls, thus avoiding a complex of lighting equipment and cables on the floor.

(To be concluded next month.)

WHAT'S THE ANGLE?

Continued From Page 355

where we can get a better view of what's going on. In a closeup, we bring the subject within arm's length.

It is almost invariably best to open a sequence with a long-shot. This plants the geography of the scene in the minds of the audience: and you've got to remember in any kind of film that although you, who made the picture, may have a clear idea of the general layout of the locale, your audience wasn't there and it probably won't be familiar with the arrangement of the place or the room. A good long-shot, held for a fair amount of footage at the beginning of the sequence, will tell them where it is, and what it's like.

But in a long-shot you can't very well see the *details* of the scene, or follow the details of the action. When you want these details in real life, you move up closer. A medium shot camera angle does this for the motion picture.

There are times when ordinary close approach is not enough to show the important detail of any thing or action.

Then, in actuality, you try to get within arm's length of whatever you're looking at, and get a closeup of it. That's the closeup's primary function in motion pictures.

Now, to bring this discussion to a more practical plane, suppose we are shooting a documentary in Zion National Park. Say we open with a pictorial long-shot of the Great White Throne. It shows the scene perfectly, including, in the middle distance, a car with some people standing around it. We don't know who they are, or what they're doing, but there they are. A medium-shot could follow, and show that they are a typical tourist group—a man, his wife and a child, and that the man was doing something to the car. Moving nearer with the camera for a closeup, we show the man changing a tire. And if we want to come to an extreme, hig-head closeup, we can show that the man is perspiring copiously!

The same thing applies to scenes in which we are more interested in what is being done, than in who is doing it. Suppose instead of the man changing the tire we are photographing an expert service-man at work: the long-shot shows where he is; the medium-shot shows who he is and what he's doing; and the closeup shows how expertly he's doing it.

Just which of these angles is best for any given scene can usually be determined by the idea we're trying to get across to the folks who see the film. If that idea is "where" or "what," the longer shots are best; if it is "who" or "how," closer shots are vital. In filming a big league ball game, a long-shot will show it's the Yankee Stadium — but only a closeup will prove it's the Yankee's star hitter batting, or show how he hats.

This business of picking camera-angles can do a lot more than this, however. How often have we seen pictures of people in dark clothes carefully posed in front of dark green shrubbery —or folks in light garments merged into light-colored backgrounds? Here, a little thought about camera-angles—selecting an angle that offered a properly contrasting background — would have obviated the need for projection-room apologies.

And there are other embarrassments that can he avoided hy similar thought of the camera's viewpoint. Recently a friend pridefully showed me a shot he had made of his wife. It was a nice shot, hut it was just too bad that a

Continued On Page 380

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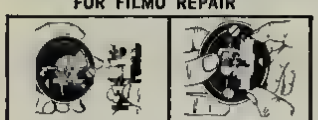
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CINE-TECHNICAL TRENDS

Continued From Page 376

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* * *

Evaluating Lens Distortion

The two methods generally used today to measure lens performance give better results than previously believed possible, according to a National Bureau of Standards study partially supported by the U. S. Air Force. In a series of tests on the same lens, the values for distortion derived either visually or photographically were precise to within ±4 microns. These limits of error are substantially better than earlier permissible limits of ±20 microns. The experimental results are expected to lead to increased accuracy in calibrating both the cameras and lenses used in photogrammetry.

Since the advent of aerial mapping from photographs, the radial distortion in the focal plane of photographic objectives (cameras and lenses) has been intensively studied. The magnitude of this distortion is a measure of the degree of accurate reproduction on an enlarged scale of the photographed scene. Lenses are consequently being developed to give ever-decreasing values for distortion in order to increase the reliability of the data derived from aerial photographs.

To evaluate lens performance several methods have been followed by testing laboratories, but the two most frequently employed are the visual method using a nodal slide bench, and the photographic method using a precision lens-testing camera. However, somewhat inconsistent values have been observed occasionally on the same lens measured at different laboratories by either one of the two methods. Since both kinds of equipment are maintained at the Bureau for special types of calibrations, the present study was undertaken by F. E. Washer, W. P. Tayman, and W. R. Darling to determine the accuracy of the two methods.

The nodal slide bench used for the

tests, although constructed 30 years ago, is still regarded as a precision instrument. It consists of a collimator, a nodal-slide lens holder, and a micrometer microscope. When the lens is carefully aligned in the holder, the axial image formed of the target's illuminated reticle coincides with the object plane of the viewing microscopes. The distortion present in a lens may then be evaluated by shifting the microscope laterally from one position to another, and comparing the results thus obtained.

The precision lens-testing camera is one of the earliest successful devices developed to measure lens performance photographically. The testing equipment includes the camera mounted on a rotating carriage between a viewing microscope and a lens holder. The lens holder is at the center of convergence of an array of 10 collimators arranged in a fan shape to cover an angle of 45°. Resolution charts are used as reticles for the collimators.

The lens under test is mounted in the holder and aligned with the collimator in the 0° position. The carriage is rotated until the camera is aimed at one of the extreme collimators and a negative is made. The carriage is then rotated until the camera is aimed at the collimator at the opposite extreme and a second negative is made. Measurements on the photographs obtained from these two positions are used to evaluate the magnitude of radial distortion present.

In the present experiment, the lens tested had an equivalent focal length of 150mm, with values of distortion referred to the equivalent focal length ranging from +110 to −110 microns. In comparing the values of distortion found by both methods, all values were referred to a calibrated focal length. Thus the positive maximum distortion value in each case was equal in magnitude to the negative minimum distortion value.

Nearly identical results were obtained with the two methods. These findings indicate that when proper care is exercised, the values obtained by either method need not depart from the common average by more than ±5 microns. In the course of the investigation it was noted that the values derived by the photographic method could be adversely affected by plate curvature; warpage of the plates or differential plate tipping; improper alignement of the collimators; and

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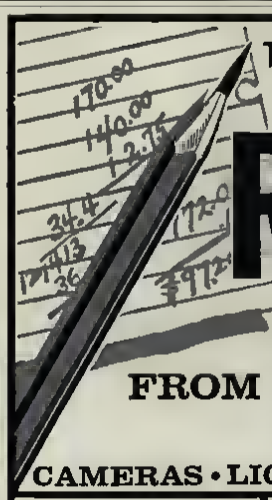
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errors in the angles separating collimators; and errors in plate measurements. A number of calibrations on the same lens with the nodal slide method showed no systematic error present when special precaution was taken in alignment adjustments.

* * *

Night Effects In Color

Color motion picture films are not yet sensitive enough for actual night time photography, according to George T. Keene of Eastman Kodak Co., who discussed the subject at the recent SMPTE convention in Toronto. He demonstrated with still pictures that photography at night does not actually simulate what the eye sees.

Previous methods for shooting night scenes in color have relied upon under exposure. But improved films have made this method impractical, Keene explained, because underexposing them gives a bright blue sky and unrealistic colors in the photographed scene. Experiments conducted with exposure values, filters, and printing of reversal films indicate that the most successful method for achieving acceptable "natural" night time effects in color photography is to overexpose the color film and then print it on a film master to get the required density. A compromise of between normal and three stops overexposure renders artificial lights correctly while maintaining the color and tone scale that most observers associate with night vision.

* * *

Calculators Aid Lens Makers

The so-called electronic brain has made it possible for today's lens designers to recalculate old formulas and to devise new ones, speedily and precisely, whereas it used to take months and sometimes years.

WHAT'S THE ANGLE?

Continued From Page 375

bushy palm tree in the background seemed to be growing straight out of her head! Two steps to the right or left would have eliminated the Zulu head-ornament. Another photographer showed me a film in which his girl-friend walked from her front door across the lawn and got into a car. She was really quite pretty—but I don't think she was nearly strong enough to do what the scene made her appear to do: The photographer had shot straight across the lawn, and just as the girl entered the picture, another car went by on the cross-street at the corner. In the scene, the girl seemed to be pushing the automobile before her like a baby carriage! If the shot had been carefully planned before the camera was started, a camera angle could have been selected that eliminated the cross-street in the background.

Mention was made earlier of the term "camera angle" as denoting (to some) a tilting or angling of the camera with respect to the subject. This, of course, is often done and with complete logic—not to produce some weird effect or distorted view, as we sometimes see in tricky still photography. One very logical reason for angling the camera is where a rapidly moving object is to be filmed and the camera shutter opening cannot be reduced to "stop" the action. Take some 16mm cameras which have a fixed shutter and give an exposure somewhere between 1/24 and 1/40 of a second. This is hardly "fast" enough to "stop" really fast action, which is so often encountered in film ing assignments today.

In order to photograph such action sharply and without blur with "one-speed" cameras, the photographer must choose the right camera angle with respect to the direction of travel of the subject to be photographed. What actually causes blur is not so much the speed of the object as the distance its image moves across the film frame during the exposure interval. So to reduce blur, reduce the movement factor by shooting the moving car coming toward the camera *at an angle* instead of moving straight in front of it.

In most cases, a ¾-angle is best, but for very fast-moving objects, it is often necessary to shoot "head-on" to minimize the blur. But if it is not possible to place the camera at such an angle—if you must shoot full broadside-on—you can still minimize blur by getting farther away from your subject. True, you will have a smaller picture of the subject, with a lot of background you may not particularly want; but since the image of the subject will be smaller, its movement across the frame will also be smaller, and the picture will be less blurred. —*Phil Tannura, ASC.*

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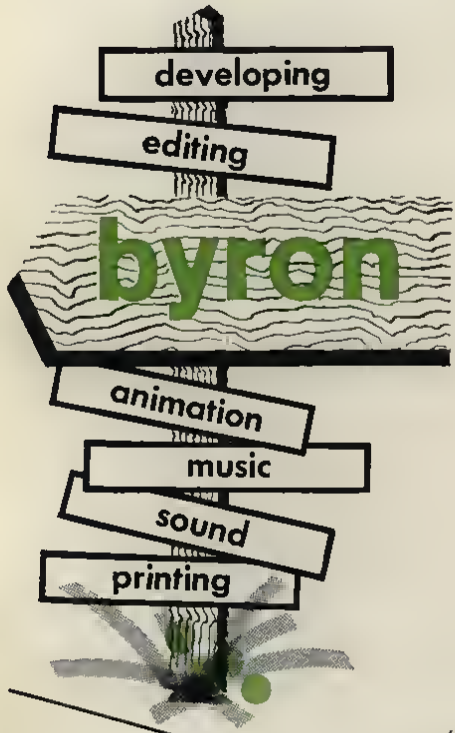
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